Panasonic

ORDER NO.VM0602003CE

Service Manual

Digital Video Camera/Recorder

NV-GS500EG
NV-GS500E
NV-GS500EB
NV-GS500EP
NV-GS500EE
NV-GS500GC
NV-GS500GN
NV-GS500SG
NV-GS500GCT
NV-GS500PL
NV-GS500GT
NV-GS508GK

VOL.1
A-MECHANISM
Colour
(S).....Silver Type

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2 Warning

2.1 Caution for AC Cord (VJA0940 type)

2.1.1 Information for your safety

IMPORTANT
Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING
To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION
To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

FOR YOUR SAFETY
DO NOT REMOVE THE OUTER COVER
To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

2.1.2 Caution for AC mains lead

For your safety, please read the following text carefully.
This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362
Check for the ASRA mark or the BSI mark on the body of the fuse.

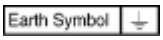
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.
If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safety.
There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.
If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

2.1.2.1 Important

The wires in this mains lead are coloured in accordance with the following code:

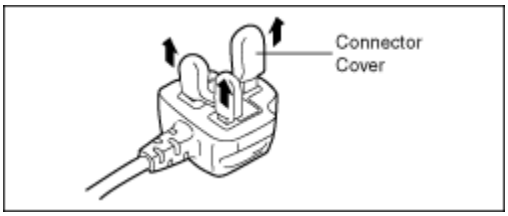
Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.
Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.



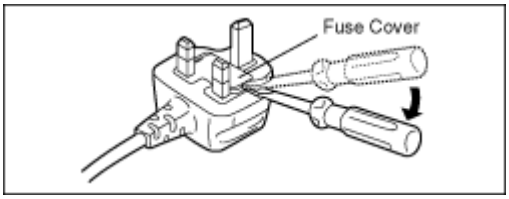
2.1.2.2 Before use

remove the Connector Cover as follows.

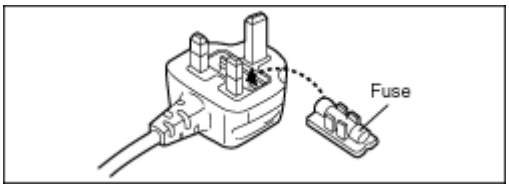


2.1.2.3 How to replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



2.2 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor components. the following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (esd). chip

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as can generate electrical charge sufficient to damage es devices. antistatic (ESD protected)
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION:
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2.3 Handling the Lead-free Solder

2.3.1 General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86 °F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of is printed either foil side or components side on the pcb using the lead free solder. PbF (See right figure)	PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used. (Definition: The letter of is printed on the pcb using the lead free solder.) PbF
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86 °F).

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
  RFKZ03D01K----------(0.3mm 100g Reel)
  RFKZ06D01K----------(0.6mm 100g Reel)
  RFKZ10D01K----------(1.0mm 100g Reel)

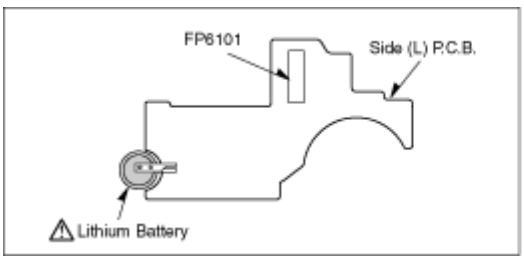
Note

* Ingredient: tin (Sn) 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

2.4 How to Replace the Lithium Battery (PROCEDURE)

1. Remove the Side (L) P.C.B.. (Refer to Disassembly Procedures.)
2. Unsolder the Lithium Battery and then replace the new one. (see figure b1.) ML-621S/F9D
3. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

Fig. B1



CAUTION
The battery used in this device may present a risk of fire or chemical burn if mistreated.
Do not recharfe, disassemble, heat above 100˚C (212˚F), or incinerate.
Replace battery with Panasonic part nmber ML-621S/F9D only.
Use of another battery may present a risk of fire or explosion.
Dispose of used battery promptly.
Keep away from children.
Do not disassemble and do not dispose of in fire.

Note:

The lithium battery is a critical component. (Type No.: ML-621S/F9D)

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in equipment designed specifically for its use.

Replacement batteries must be of the same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

PRECAUTION

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

VORSICHT

Bei einer falsch eingesetzten Batterie besteht Explosionsgefahr. Nur mit einer vom Hersteller empfohlenen Batterie vom gleichen Typ ersetzen.
Verbrauchte Batterien beim Fachhändler oder einer Sammelstelle für Sonderstoffe abliefern.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning má kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

3 Service Navigation

3.1 Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

Note 1:

These movie camera uses AC Adaptor VSK0644.

Note 2:

1) This service manual does not contain the following information, because of the impossibility of sevicing at component level.

1. Schematic Diagram, Block Diagram and P.C.B. layout of Main P.C.B./Sub P.C.B.
2. Parts List for individual parts of Main P.C.B./Sub P.C.B.

2) The following category are recycle module part. Please send them to Central Repair Center.

*Main P.C.B.

(VEP03G87K: NV-GS500EG/E/EB/EP, VEP03G87L: NV-GS500EE/GC/GN/SG, VEP03G87M: NV-GS508GK, VEP03G87Q: NV-GS500GT, VEP03G87R: NV-GS500PL, VEP03G87U: NV-GS500GCT)

*Sub P.C.B.

(VEP23646B: NV-GS500EG/E/EB/EP/EE/GC/GN/SG/GCT, GS508GK, VEP23646C: NV-GS500PL/GT)

When a part replacement is required for repairing each Main P.C.B. and/or Sub P.C.B., replace the assembly parts. (Main P.C.B. and/or Sub P.C.B.)

The following circuits are contained in Main P.C.B.

1. Main Connection Circuit
2. AVIO Circuit
3. Video Circuit
4. Power Circuit
5. Control Circuit

The following circuit is contained in Sub P.C.B..

1. Sub Connection Circuit
2. Camera Circuit
3. Lens Drive Circuit

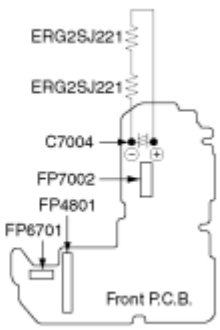
3.2 Service Caution

3.2.1 How to Discharge the Capacitor on the Front P.C.B.

Remove the Front P.C.B.. (Refer to Disassembly Procedures.)

CAUTION
Be sure to discharge the capacitor on Front P.C.B. before disassembling.
CAUTION
Be careful of the high voltage circuit on Front P.C.B. when servicing.

Method:
1.Prepare the 2 Resistors (ERG2SJ221:220 ohm/2w) for discharge.
Note:
Above 2 Resistors may be substituted with equivalent type.
2.Make short circuit using 2 Resistors between C7004(+) and C7004(-) for 3 seconds as follows.
3.After discharging, confirm that the capacitor voltage is sufficiently lowered using a voltmeter



3.2.2 EEPROM data for spare parts of the Main P.C.B.

When the Main P.C.B. is replaced, the fixed and average data must be changed by Tatsujin kit according to the Movie Camera's suffix.

Then, confirm and/or adjust the VTR and Camera section one by one.

4 Specifications

Digital Video Camera / Recoder

ITEM	SPECIFICATION
POWER	Source: DC 7.9 / 7.2 V Consumption: Recording 4.2 W (When using Viewfinder) 4.5 W (When using LCD Monitor)
RECORDING FORMAT	Mini DV (Consumer-use Digital Video SD Format)
TAPE USED	6.35 mm digital video tape
RECORDING / PLAYBACK TIME	SP mode: 80 min. with DVM80 LP mode: 120 min. with DVM80
CAMERA	Filter Diameter: 43.0 mm
	Zoom: 12:1 Power Zoom
	Monitor: 2.7-inch LCD
	Lens: Auto Iris, F1.6 to F2.8, Focal Length; 3.3 - 39.6 mm Macro (Full Range AF)
	Image Sensor: 1/4.7-inch 3CCD Image Sensor
	Viewfinder: Colour Electronic Viewfinder
WEB CAMERA	Compression: Motion JPEG
	Image Size: 320 × 240 pixels (QVGA)
	Frame Rate: Approx. 6fps
VIDEO	Recording System: Digital Component
	Television System: CCIR; 625 Lines, 50 Fields PAL Colour Signal (Except NV-GS500PL/GT) EIA Standard: 525 Lines, 60 Fields NTSC Colour Signal (NV-GS500PL/GT)
	Video Output Level: 1.0 Vp-p 75 ohm (AV Multi Jack) S-Video Output Level: Y Output; 1.0 Vp-p 75 ohm (AV Multi Jack) C Output; 0.3 Vp-p 75 ohm (Except NV-GS500PL/GT) C Output; 0.286 Vp-p 75 ohm (NV-GS500PL/GT)
AUDIO	Recording System: PCM Digital Recording 16 bit (48 kHz/2 ch) 12 bit (32 kHz/4 ch)
	Audio Output Level: 316 mV, 600 ohm (AV Multi Jack) Mic Input: Mic sensitivity -50dB(0dB=1V/Pa,1kHz) (Stereo Mini Jack)
CARD MEMORY FUNCTIONS	Recording Media: SD Memory Card Still Picture Recording File Format: JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding Still Image Size: Mega-pixel Recording; 2288 × 1728 (4.0 million pixels, 4:3 Mode) 2288 × 1288 (3.0 million pixels, 16:9 Mode) 1600 × 1200 (2.0 million pixels, 4:3 Mode) 1280 × 960 (1.0 million pixels, 4:3 Mode) VGA Recording; 640 × 360 (16:9 Mode) 640 × 480 (4:3 Mode)

ITEM	SPECIFICATION
STANDARD ILLUMINATION	1,400 lx
MINIMUM REQUIRED ILLUMINATION	2 lx (Colour Night View Mode)
USB	Card reader/writer function, USB 2.0 compliant (Hi-Speed) No copyright protection support Pict Bridge-Compliant
DIGITAL INTERFACE	DV Input/Output Terminal (IEEE1394, 4-pin)
VIDEO FLASH	GN 5.3
MICROPHONE	Stereo (with a zoom function)
SPEAKER	1 round speaker ¢20 mm
OPERATING TEMPERATURE	0 °C - 40 °C
OPERATING HUMIDITY	10 % - 80 %
WEIGHT	Approx. 570 g (without supplide Battery, DV cassette and lens cap) Approx. 670 g (with supplide Battery, DV cassette and lens cap)
DIMENSIONS	Approx. 91 (W) × 73 (H) × 153 (D) mm (excluding the projection parts)
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack Unit 1 pc. DC Cable 1 pc. AC Cord (Except NV-GS500GC/SG) 2 pcs. AC Cord (NV-GS500GC/SG) 1 pc. AV Multi Cable 1 pc. Remote Controller 1 pc. Bottom-type Battery 1 pc. Head Cleaner (NV-GS500EE/GC/GN/GCT/SG, GS508GK) 1 pc. Shoulder Belt 1 pc. Universal Remote Controller
SOLDER	This model use lead free solder (PbF).

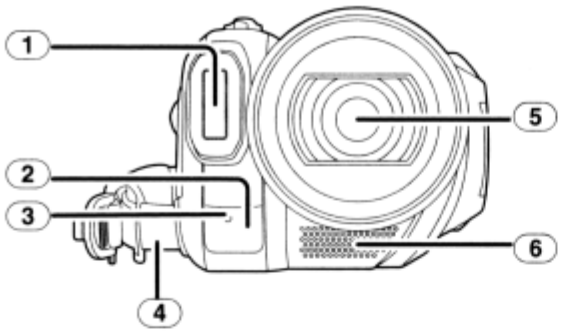
Weight and dimensions are approximate values.
Specifications may change without prior notice.

5 Location of Controls and Components

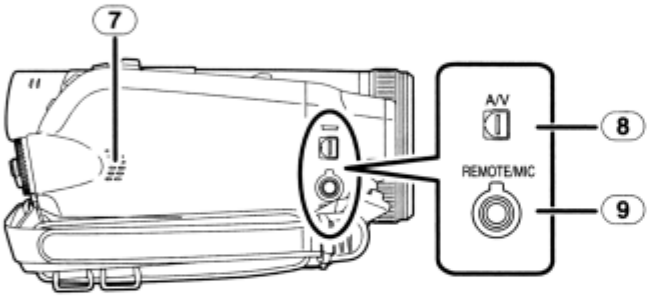
Followings are the Location of Controls and Components for NV-GS500EB as a sample.
For other models, refer to each Operatin Instructions.

Parts identification and handling

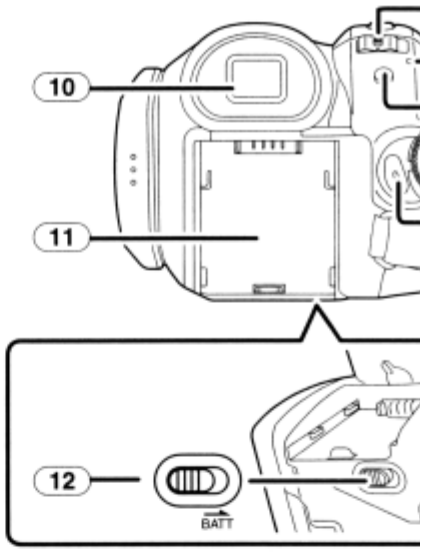
■ Camera



1. **Built-in video flash**
2. **White balance sensor**
   Remote control sensor
3. **Recording lamp**
4. **Grip belt**
   (One-touch free-style grip belt)
5. **Lens (LEICA DICOMAR)**
6. **Microphone (built-in, stereo)**



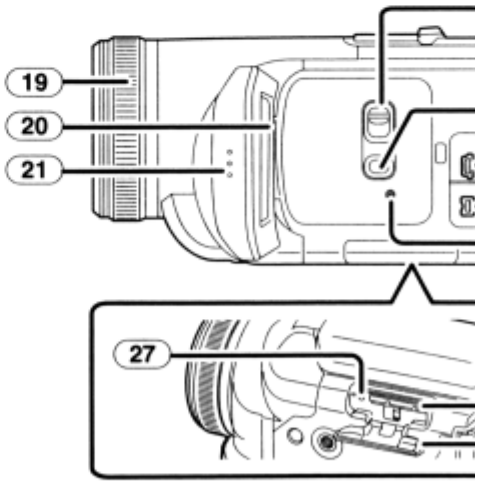
7. **Speaker**
8. **Audio-video/S-Video output terminal [A/V]**
   - Use the supplied Multi cable only, otherwise audio may not be played back normally.
9. **Terminal for free style remote control [REMOTE]**
   Microphone terminal [MIC]
   - A compatible plug-in powered microphone can be used as an external microphone.
   - When the movie camera is connected with AC adaptor, sometimes noise may be heard depending on microphone type. In that case, please switch to battery for power supply and noise will stop.



10. **Viewfinder**

> Due to limitations in LCD produ
> technology, there may be some
> dark spots on the Viewfinder s
> However, this is not a malfunct
> not affect the recorded picture.

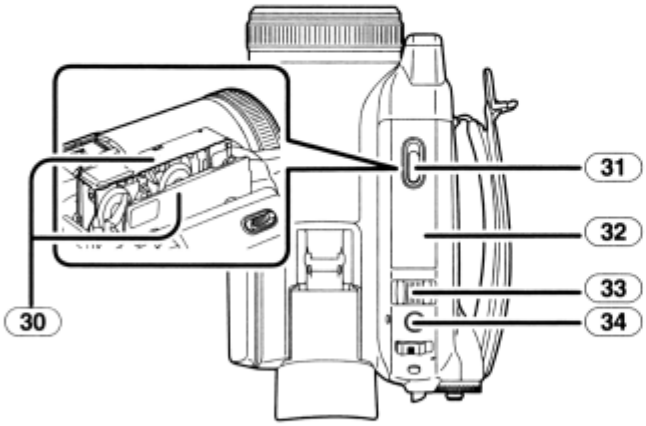
11. **Battery holder**
12. **Battery release lever [BAT**
13. **Power switch [OFF/ON]**
14. **Status indicator**
15. **Menu button [MENU]**
16. **Joystick**
17. **Mode dial**
18. **Recording start/stop butto**



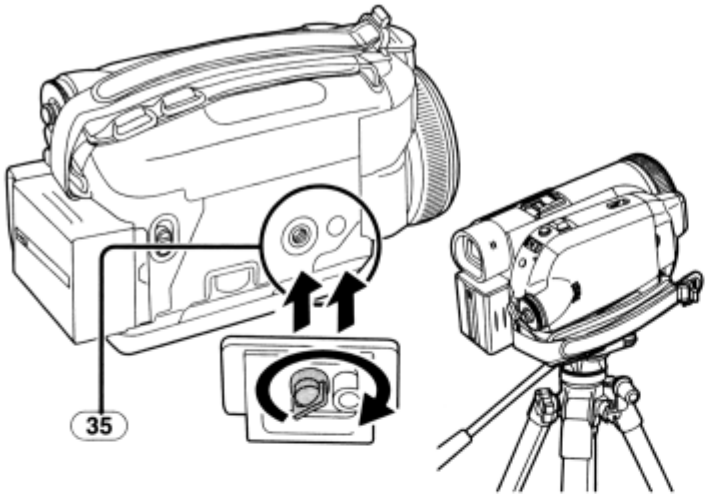
19. **Focus ring**
20. **LCD monitor**

> Due to limitations in LCD produ
> technology, there may be some

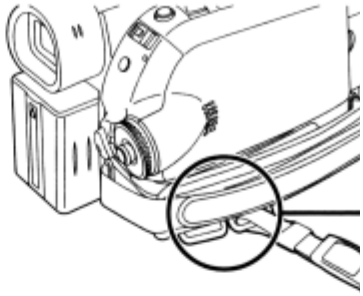
(21) **LCD monitor open part [OPEN]**
(22) **Mode select switch [AUTO/MANUAL/ FOCUS]**
(23) **Power LCD button [POWER LCD]**
(24) **USB terminal [⇐]**
(25) **DV input/output terminal [DV]**
(26) **Reset button [RESET]**
(27) **Card access lamp**
(28) **Card slot**
(29) **Card slot cover**



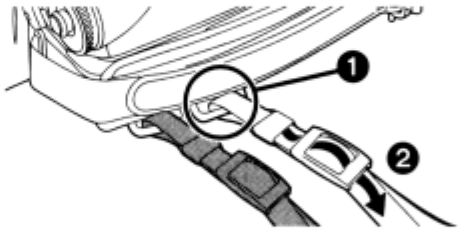
(30) **Cassette holder**
(31) **Cassette eject lever [OPEN/EJECT]**
(32) **Cassette cover**
(33) **Zoom lever [W/T]**
Volume lever [−/VOL+]
(34) **Photoshot button [PHOTO SHOT]**



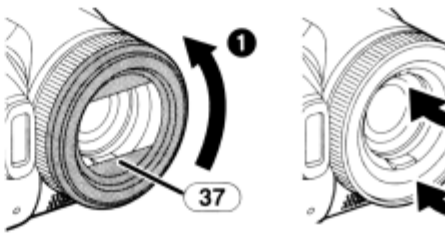
(35) **Tripod receptacle**
This is a hole for attaching the camera to optional tripod/VW-CT45E. (Please carefully read the operating instructions for how to attach the tripod to the camera.)
- When the tripod is used, operate the camera from the free style remote control for convenience. (When not using the remote



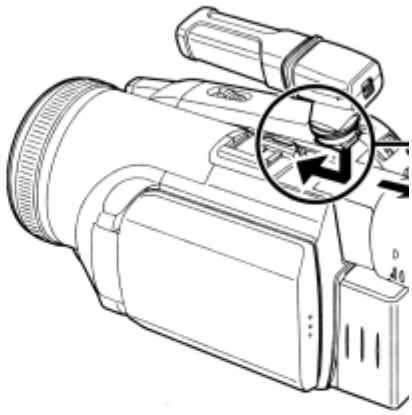
(36) **Shoulder strap fixture**
This is a fixture for attaching the s
hang the camera from your neck



- Put the strap through the fixture
the stopper ❷ so it will not com
part ❸ by at least 2 cm.
- Fit the other end of the belt simi



(37) **Lens hood**
In order to remove the lens hood,
counterclockwise ❶. In order to f
❷, and then rotate it clockwise.



(38) **Smart accessory shoe**
The stereo zoom microphone /V
(optional) or the video DC light/V
(optional) should be mounted her

7 Service Fixture & Tools

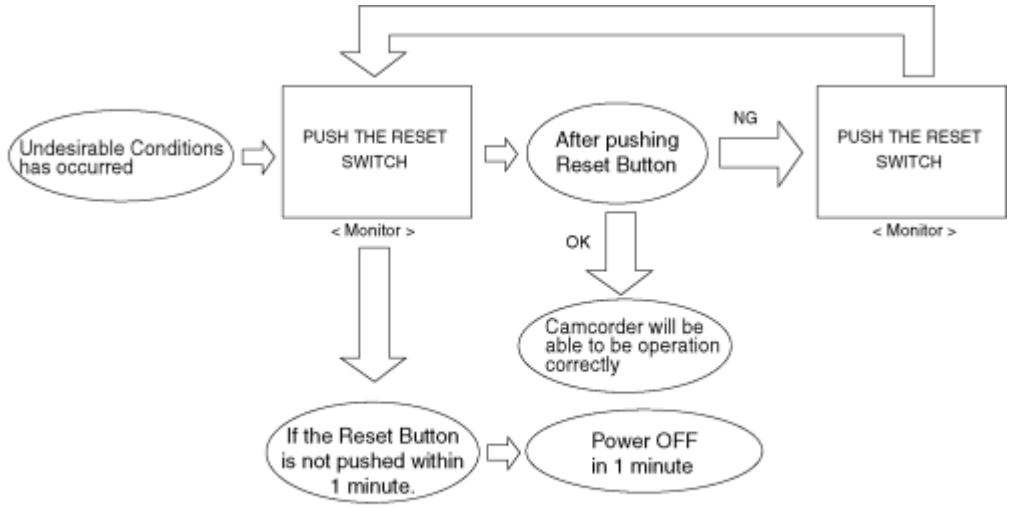
7.1 Service Tools and Equipment

Parts Name	Parts No.	Q'ty	Remarks
Step Up Ring	VFK1164TAR43	1	For Collimator 43mm
TATSUJIN PC-Adjustment Program	VF0D2003AV30	1	
Envelope Detection Special Board	VFK1641	1	
Post Driver	VFK1899	1	
Standard Tape	VFM3010EDS	1	
Extension Cable (45pin)	VFK1575C4520	1	FP6902 (Main) - FP4801 (Front)
Extension Cable (45pin)	VFK1575C4520	1	FP701 (Sub) - Lens Unit
Extension Cable (40pin)	VFK1453	1	PS201 (Sub) - Prism Unit
Extension Cable (25pin)	VFK1716	1	FP602 (Side R) - FP902 (Monitor)
Extension Cable (31pin)	VFK1978	1	FP601 (Side R) - FP853 (EVF)
Extension Cable (60pin)	VFK1993	1	PS6901 (Main) - PS6301 (Side R)
Extension Cable (5pin)	VFK1465	1	FP6302 (Side R) - Operation (R) Unit
Extension Cable (10pin)	VFK1440	1	FP6701 (Front) - MF Sensor Unit

6 Service Mode

6.1 Error Display

is displayed automatically on the evf or the lcd monitor when an undesirable condition has occured.
PUSH THE RESET SWITCH


Undesirable Conditions has occurred
PUSH THE RESET SWITCH
< Monitor >
After pushing Reset Button
NG
PUSH THE RESET SWITCH
< Monitor >
OK
Camcorder will be able to be operation correctly
If the Reset Button is not pushed within 1 minute.
Power OFF in 1 minute

Note:

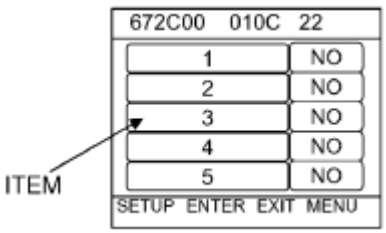
When "PUSH THE RESET SWITCH" is displayed repeatedly, required.
Check the Error Code which is listed in the Service Menu.

6.2 Service Menu

When abnormal detection contents are confirmed a When I do the following operation automatic diagnosis cord is displayed.

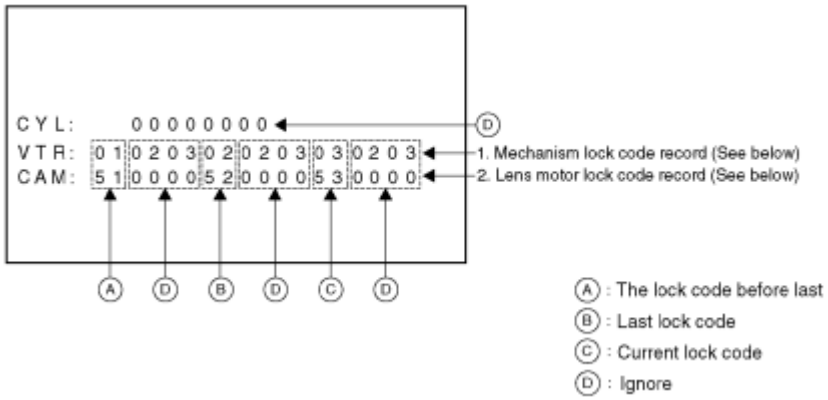
1. Preparation
   Remove the card and tape from this machine.
2. Service menu is dieplayed. (see Fig. S1)
   Pushed [PHOTO SHOT] button and [JOYSTICK LEFT] button and [auto/manual/focus switch to focus] button simmultaneously for 3 seconds. ◀
3. Operating automatic diagnosis cord is displayed.
   Item [3] is selected with the [JOYSTICK UP or DOWN] button. ▲/▼
   [NO] is selected with the [JOYSTICK RIGHT] button. ▶
   [YES] is selected with the [JOYSTICK UP or DOWN] button. ▲/▼
   Press the [JOYSTICK CENTER] button.

Fig. S1



NOTE:

Do not operate items Except for 3 in the Service Menu.
Self diagnosis cord contents are as follows.


CYL: 00000000
VTR: 01 0203 02 0203 03 0203
CAM: 51 0000 52 0000 53 0000
1. Mechanism lock code record (See below)
2. Lens motor lock code record (See below)
A D B D C D
A : The lock code before last
B : Last lock code
C : Current lock code
D : Ignore

Display contents (self diagnosis cord contents)

Mechanism & Lens motor lock code

DISPLAY	CONDITION
01	T-REEL LOCK
02	S-REEL LOCK
03	UNLOADING LOCK
04	LOADING LOCK
05	CYLINDER
51	ZOOM MOTOR LOCK
52	FOCUS MOTOR LOCK

Turn off the power supply after confirmation.

Please do the error cord backup record the clear after repair completion.

CLEAR METHOD

If the Card and Tape inserted, take out it before Service Mode operation.

Making the mode dial of This Machine a tape recording mode, push [JOYSTICK LEFT] button and [auto/manual/focus switch to focus] button and [recording start/stop] button simultaneously ◀ for 3 seconds.

1 Safety Precaution

1.1 General Guidelines

1. IMPORTANT SAFETY NOTICE
   There are special components used in this equipment which are important for safety. These parts are marked by in the schematic diagrams, circuit ⚠ Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock fire, or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.

3. When servicing, observe the original lead dress. It a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

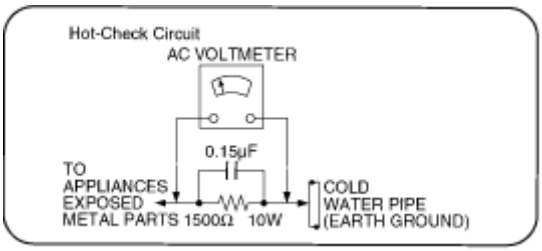
1.1.1 Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.1.2 Leakage current hot check (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect to exposed metallic part on the set. and connect A to a good earth ground, as shown in B Figure 1
3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS.
   A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Figure 1

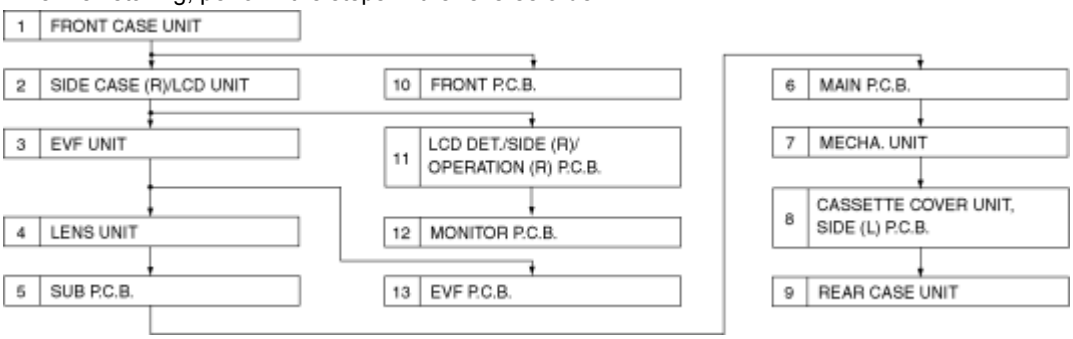


8 Disassembly and Assembly Instructions

8.1 Disassembly Frow Chart

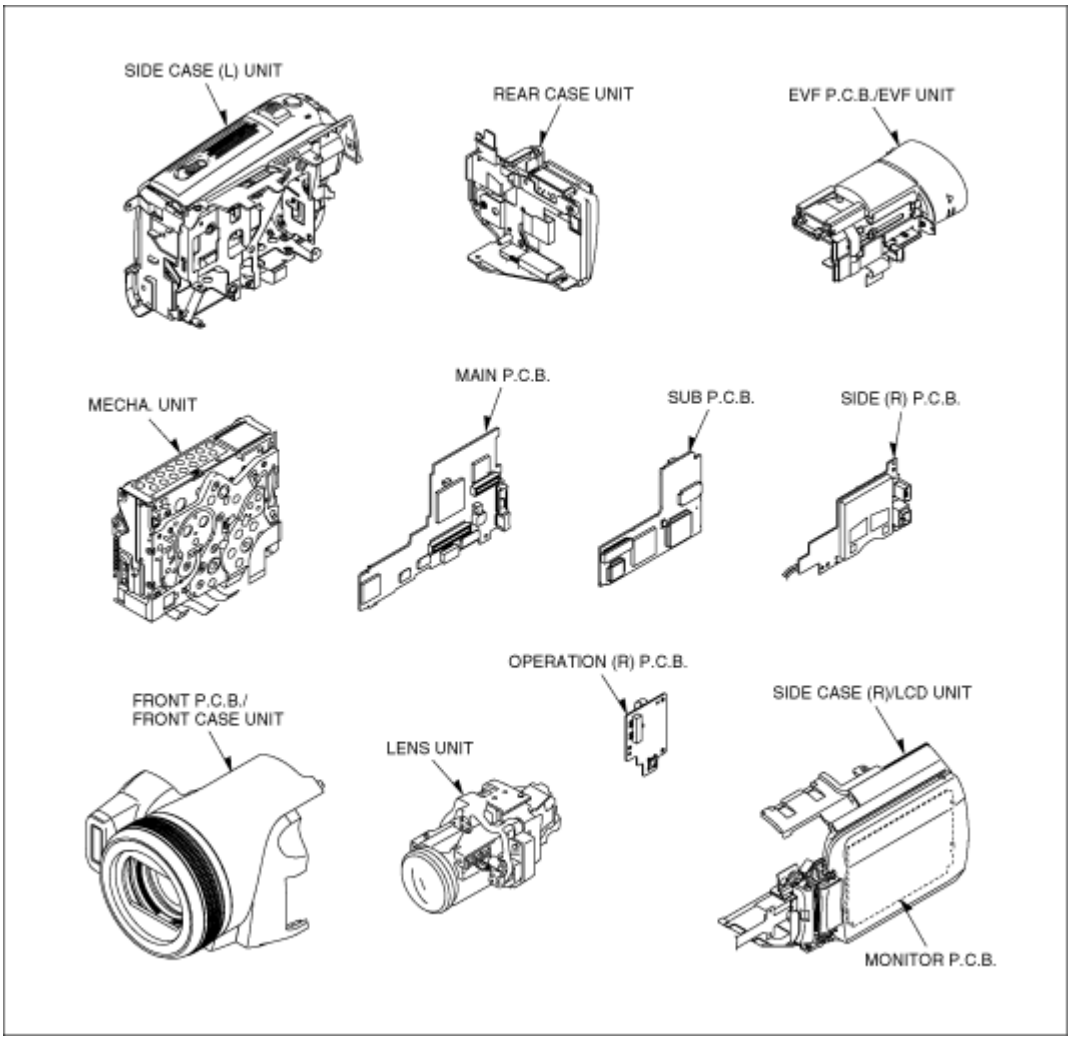
This flow chart indicates the disassembly steps the cabinet parts, P.C.B. and Mecha. Unit in order to access to be serviced.

When reinstalling, perform the steps in the reverse order.



8.2 P.C.B. Layout

Fig. F1



8.3 Disassembly Procedures

Flow-Chart for Disassembly Procedure

No.	Item / Part	Fig.	Removal (Screw,Connector,Flex. & Other)
1	Front Case Unit	Fig.D2	2-Screws (A)
		Fig.D3	2-Screws (B)
		Fig.D4	Open the LCD Unit 1-Screw (C)
		Fig.D5	1-Connector FP6902 Front Case Unit
2	Side Case (R) Unit / LCD Unit	Fig.D6	2-Screws (D)
		Fig.D7	1-Screw (E), 1-Screw (F)
		Fig.D8	1-Screw (G) 2-Tabs 2-Connectors FP601, FP6901 Side Case (R) Unit / LCD Unit
3	EVF Unit	Fig.D9	1-Screw (H), 1-Screw (I) EVF Unit
4	Lens Unit	Fig.D10	1-Screw (J) 2-Connectors FP701, PS201 Lens Unit
5	Sub P.C.B.	Fig.D11	1-Connector PS3001 Sub P.C.B.
6	Main P.C.B.	Fig.D12	7-Connectors FP1001, FP2201, FP2202, FP2203, FP2204, FP5001, FP6903 1-Screw (K)

			3-Tabs Main P.C.B.
7	Mecha. Unit	Fig.D13	Open the Cassette Cover 3-Screws (L) Mecha. Unit
8	Cassette Cover Unit,Side (L) P.C.B.	Fig.D14	4-Screws (M), 1-Screw (N), 1-Screw (O)
		Fig.D15	Remove the Cassette Cover Unit with the procedure of arrow 1,2.
		Fig.D16	1-Connector FP6101 1-Screw (P) Side (L) P.C.B.
9	Rear Case Unit	Fig.D17	1-Screw (Q) 3-Tabs Top Case
		Fig.D18	1-Screw (R) Grip Belt, Belt Plate 2-Screws (S),1-Screw (T) Side Case (L) 1 Unit 1-Screw (U) Rear Case Unit
10	Front P.C.B.	Fig.D19	2-Connector FP6701, FP7002 2-Screws (V), 1-Screw (W) Front P.C.B.
11	LCD Det. /Side (R)/Operation (R) P.C.B.	Fig.D20	1-Connector PS6301 3-Screws (X) Side Case (R) 1 Unit 1-Screw (Y) LCD Det. P.C.B. **Note:** Open the LCD Unit, when you attach the LCD Det. P.C.B.
		Fig.D21	2-Screws (Z), 2-Screws (a)
		Fig.D22	1-Screw (b) 1-Connector FP602 Hinge Support Plate
		Fig.D23	1-Connector FP6302 1-Screw (c) Side (R) P.C.B.
		Fig.D24	3-Screws (d) Operation (R) P.C.B.
12	Monitor P.C.B.	Fig.D25	2-Screws (e), 2-Screws (f) LCD Case (Upper) Unit
		Fig.D26	1-Connector FP902 LCD Hinge Unit, LCD Earth Plate
		Fig.D27	1-Connector FP903 3-Tabs Monitor P.C.B.
13	EVF P.C.B.	Fig.D28	1-Tab View ADJ. / EVF LCD Unit
		Fig.D29	2-Screws (g)
		Fig.D30	4-Tabs EVF Case (Upper)
		Fig.D31	2-Tabs 1-Connector FP853 EVF Case (Lower)
		Fig.D32	1-Connector FP854 3-Tabs EVF P.C.B.

Fig. D1

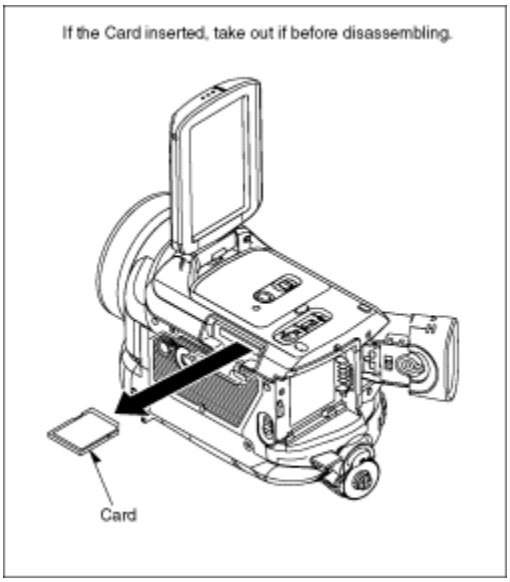


Fig. D2

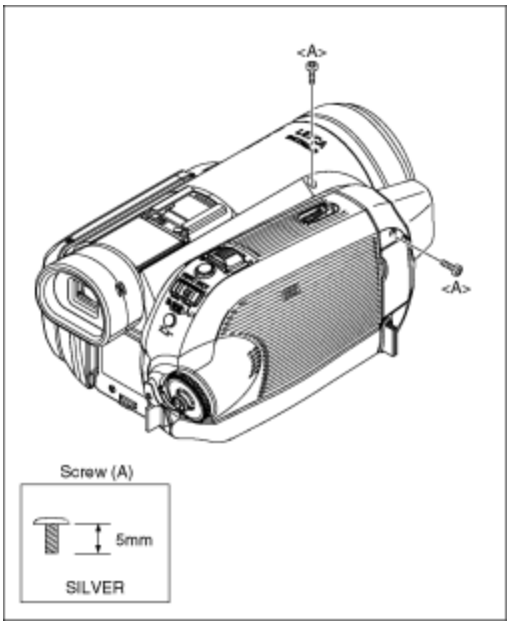


Fig. D3

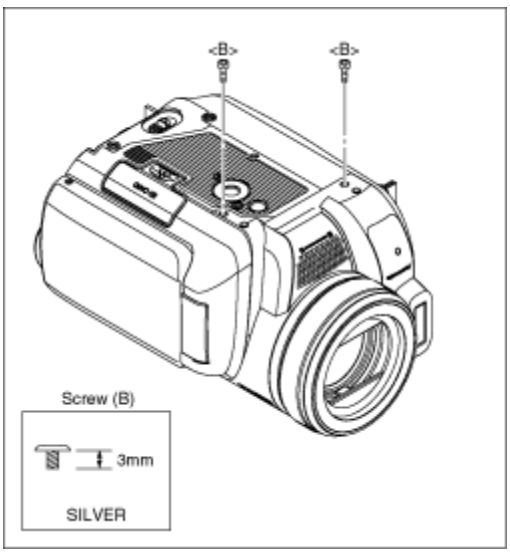


Fig. D4

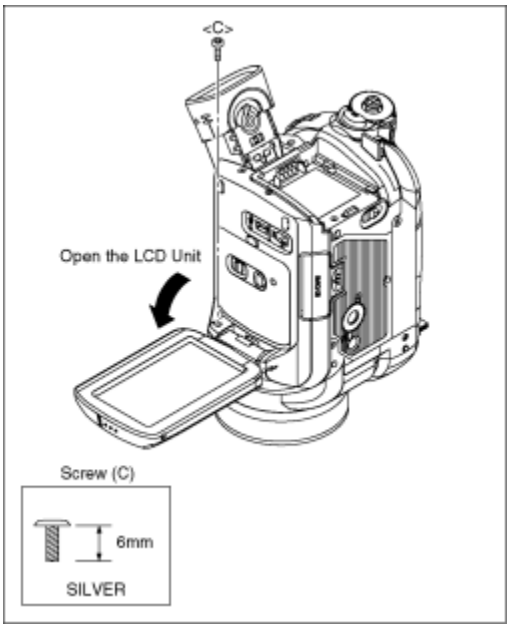


Fig. D5

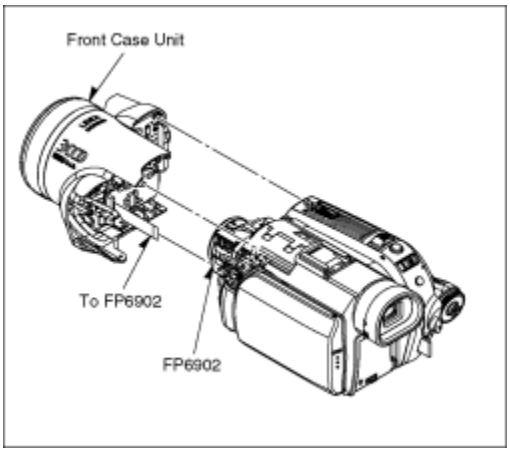


Fig. D6

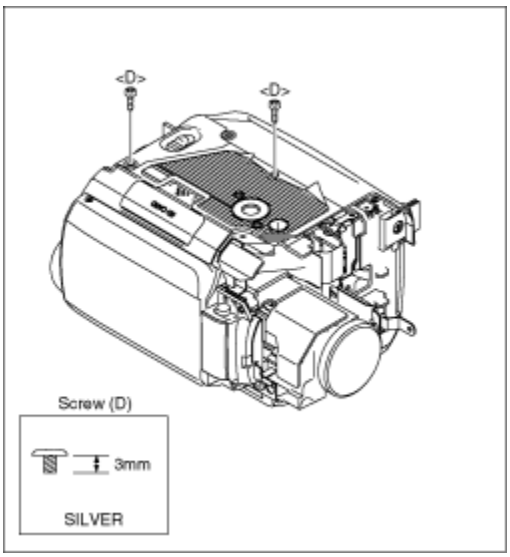


Fig. D7

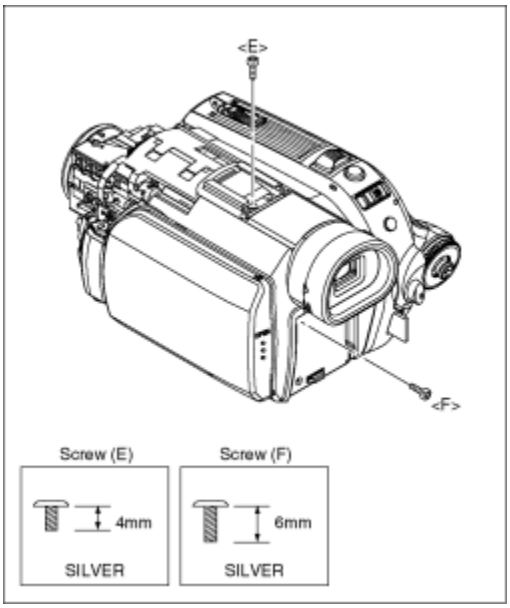

<E>
<F>
Screw (E)
4mm
SILVER
Screw (F)
6mm
SILVER

Fig. D8

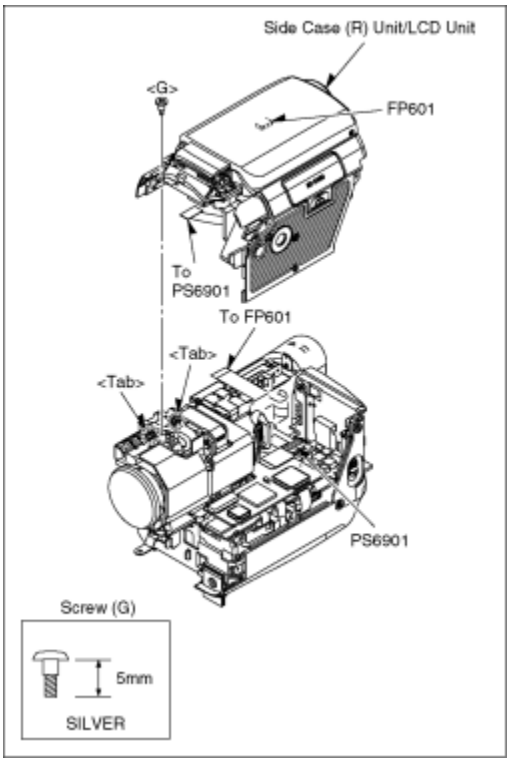

Side Case (R) Unit/LCD Unit
<G>
FP601
To
PS6901
To FP601
<Tab>
<Tab>
PS6901
Screw (G)
5mm
SILVER

Fig. D9

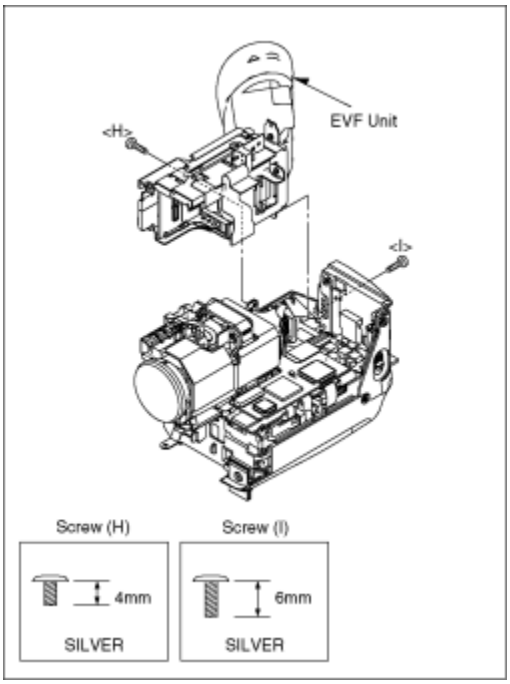


Fig. D10

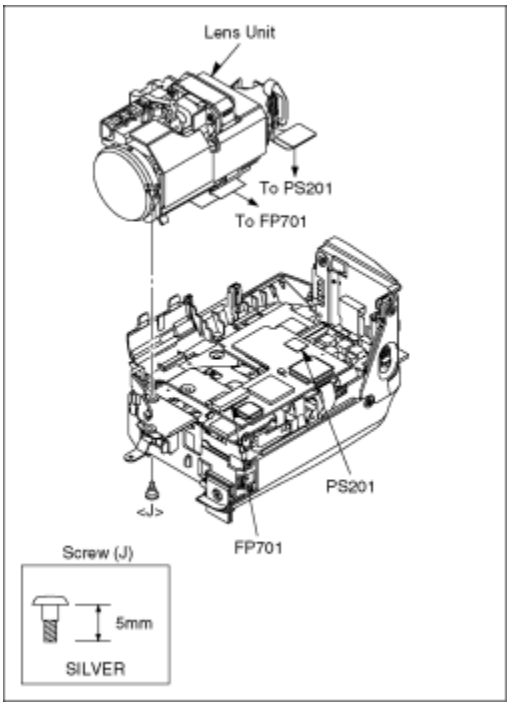


Fig. D11

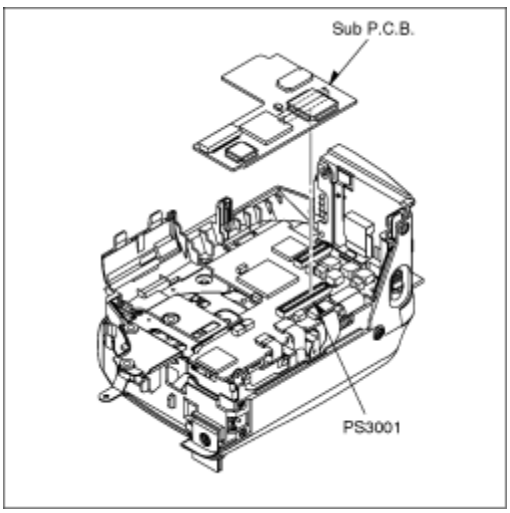


Fig. D12

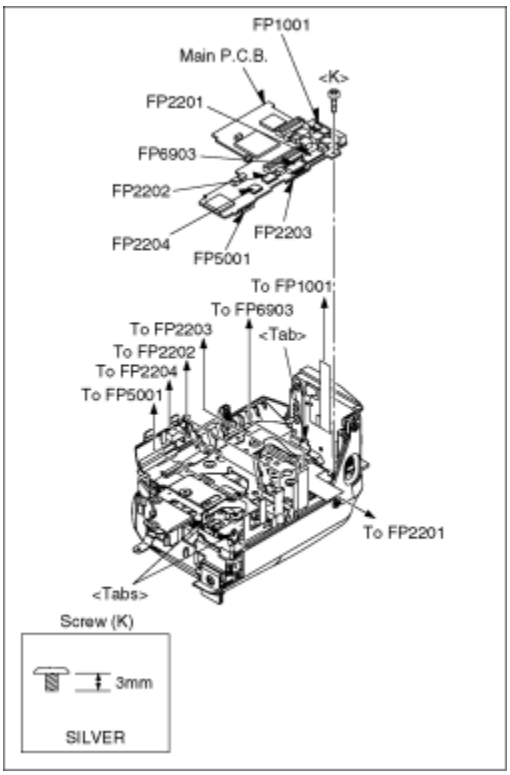


Fig. D13

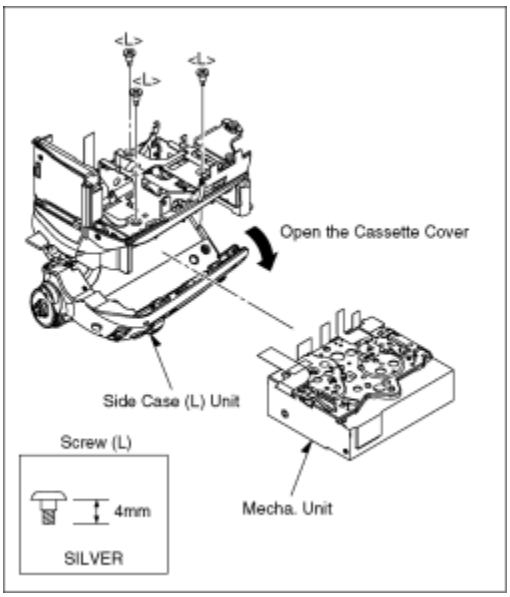


Fig. D14

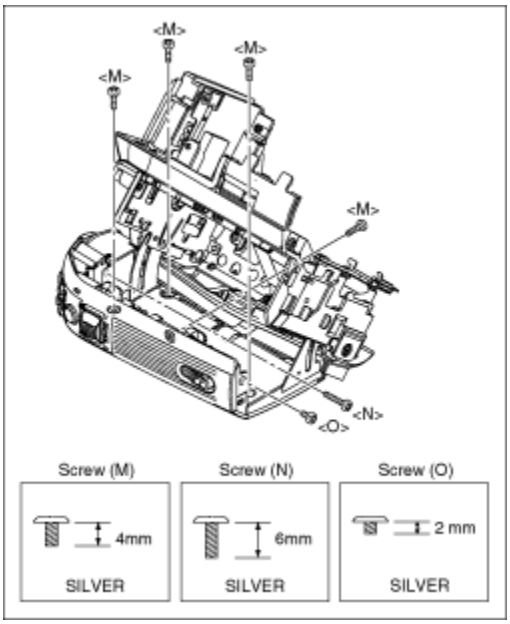


Fig. D15

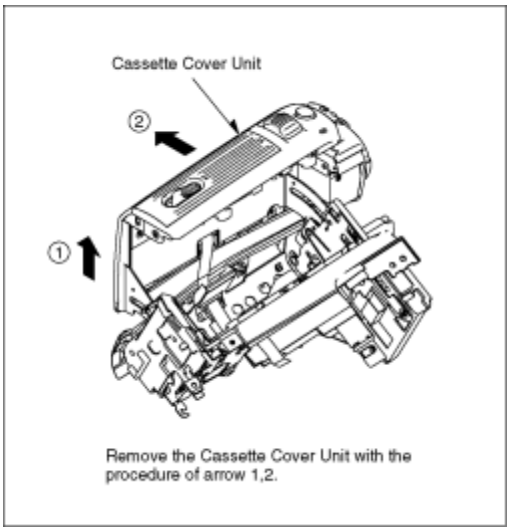


Fig. D16

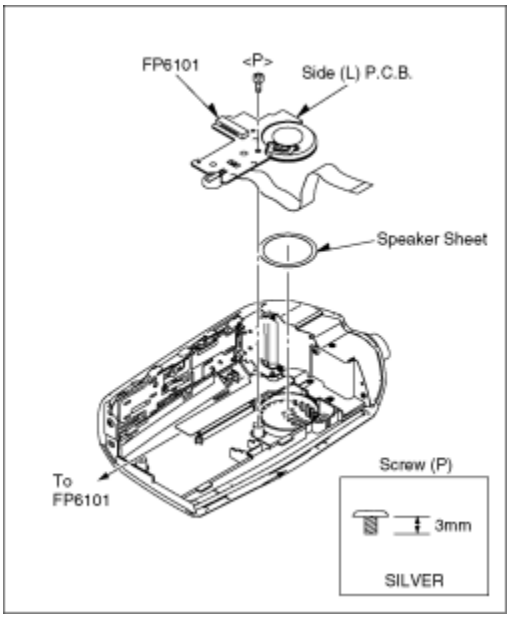


Fig. D17

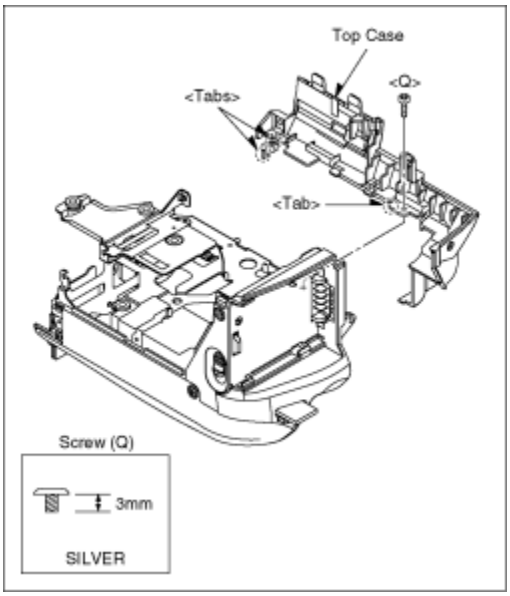


Fig. D18

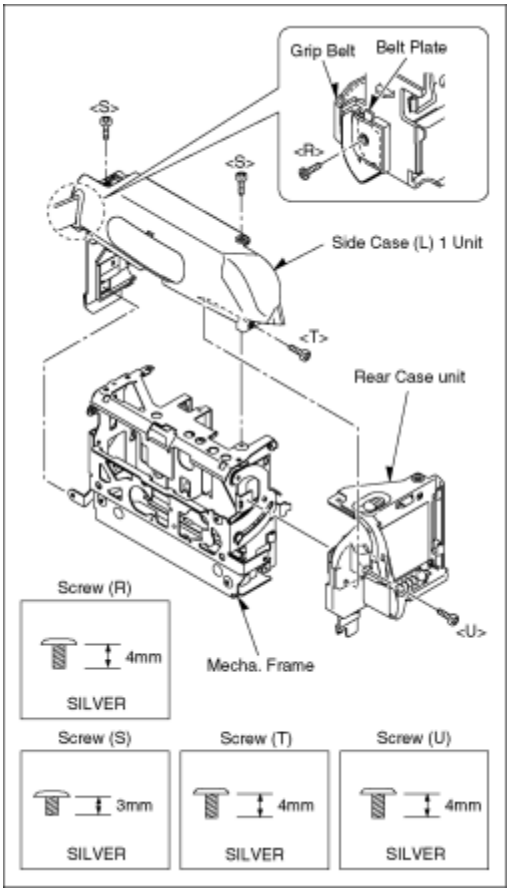


Fig. D19

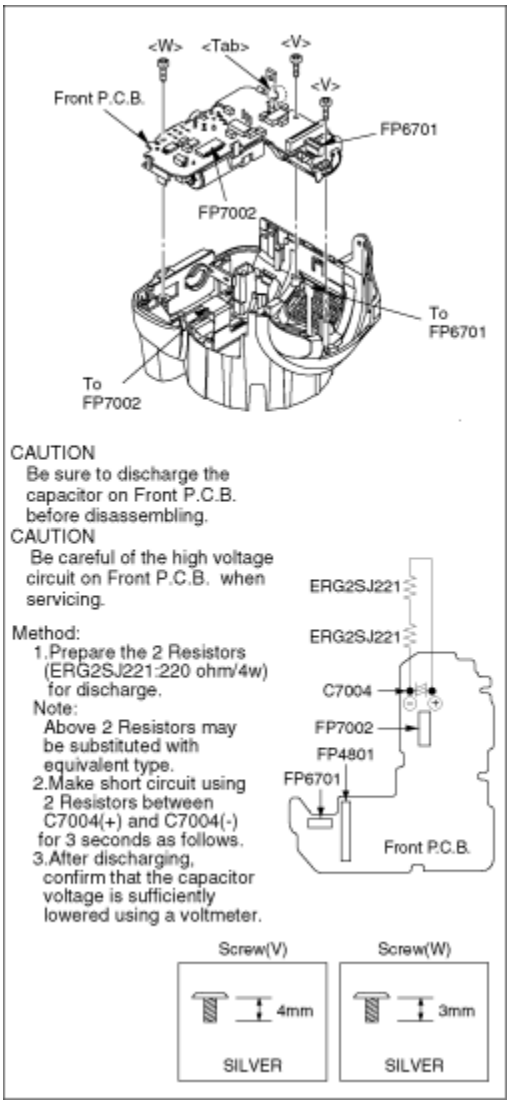


Fig. D20

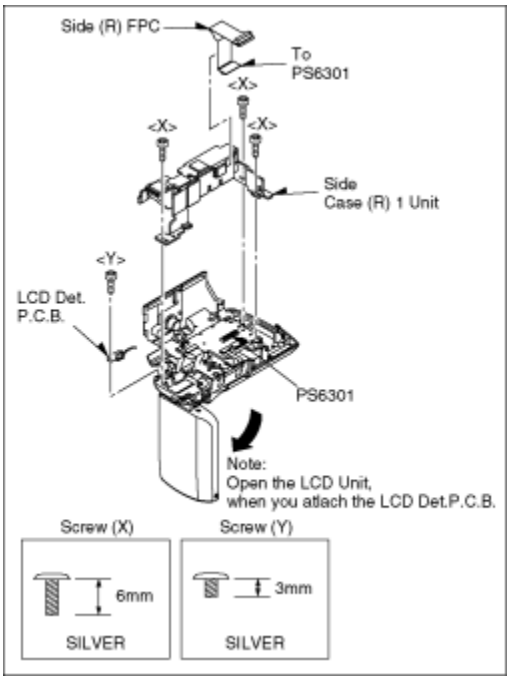


Fig. D21

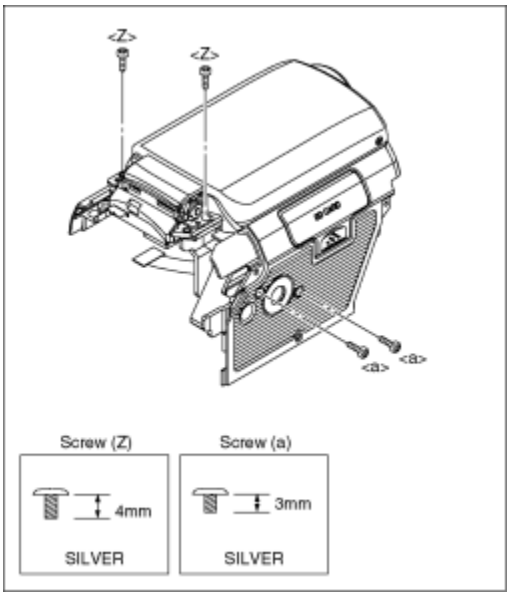


Fig. D22

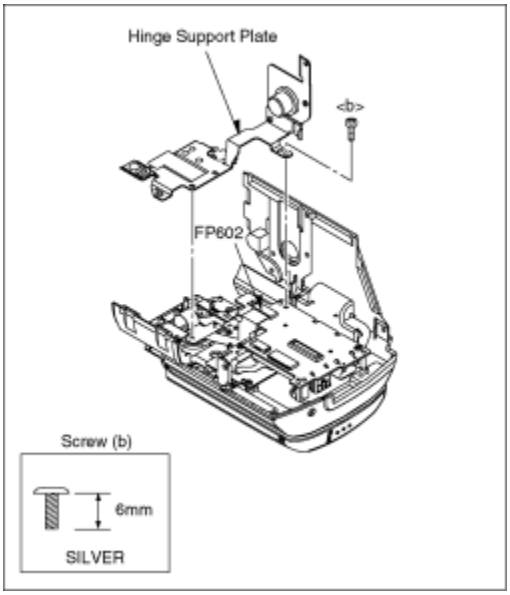


Fig. D23

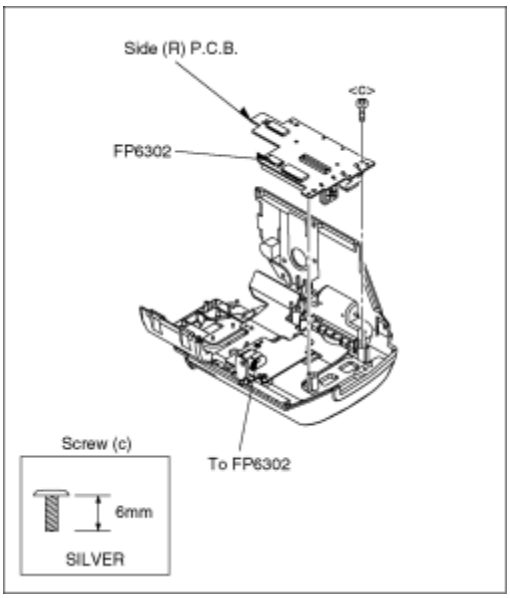


Fig. D24

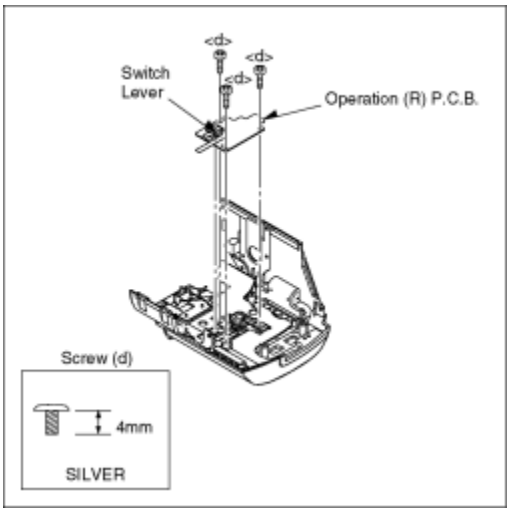


Fig. D25

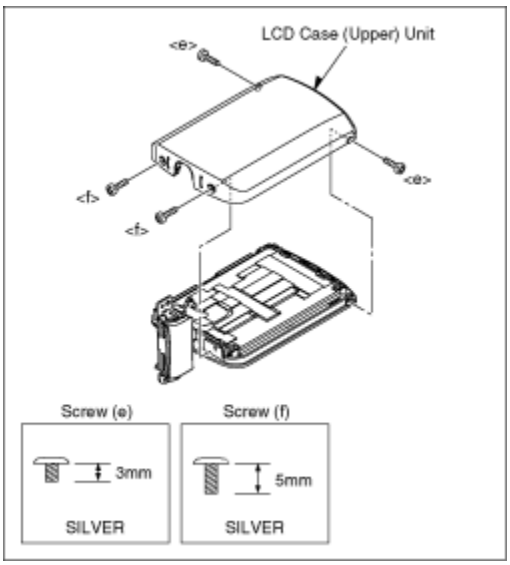


Fig. D26

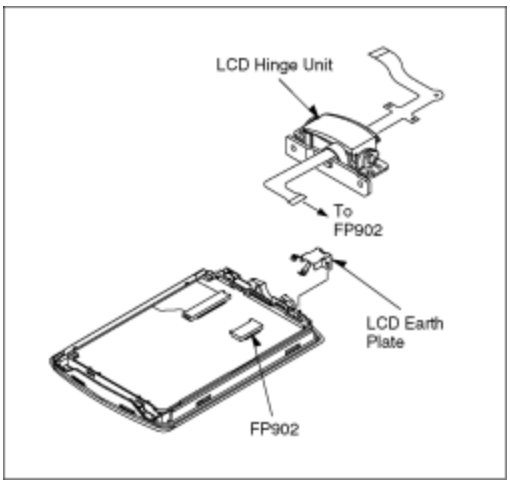


Fig. D27

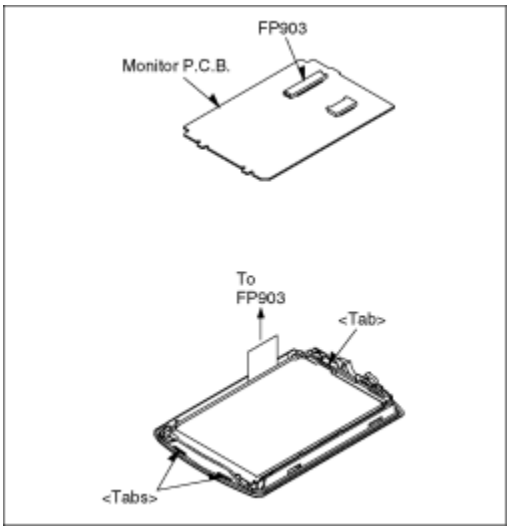


Fig. D28

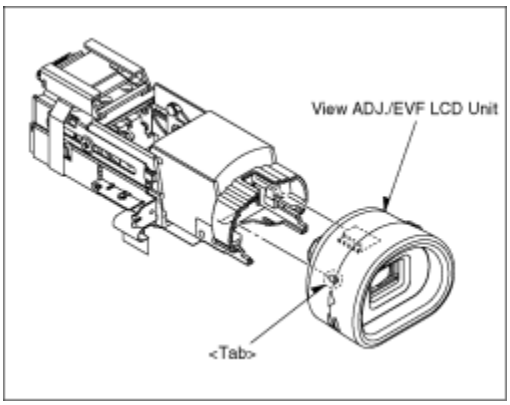


Fig. D29

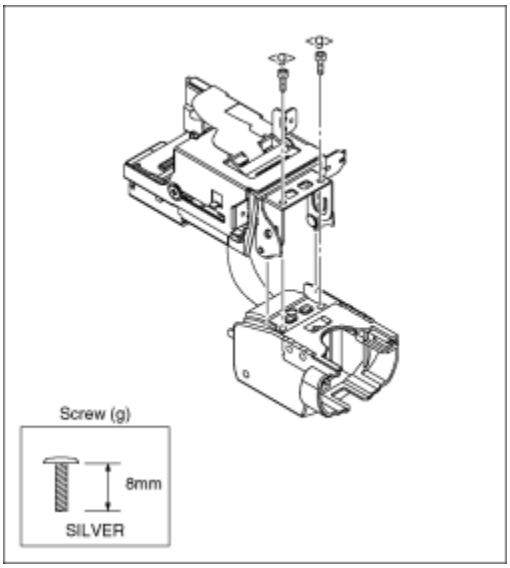


Fig. D30

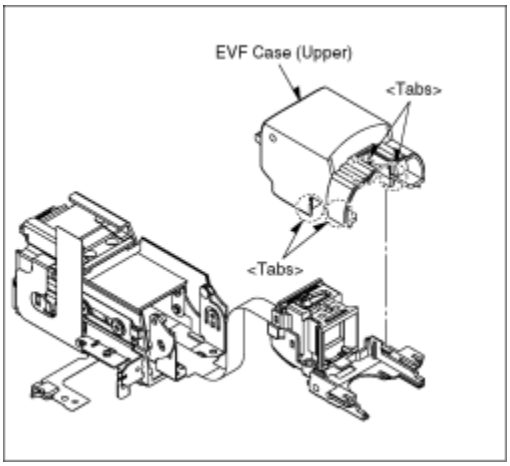


Fig. D31

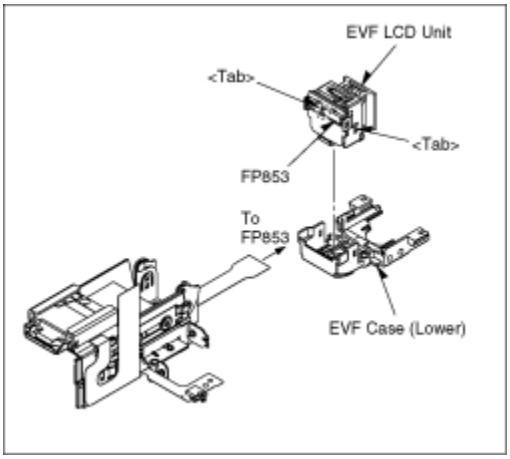
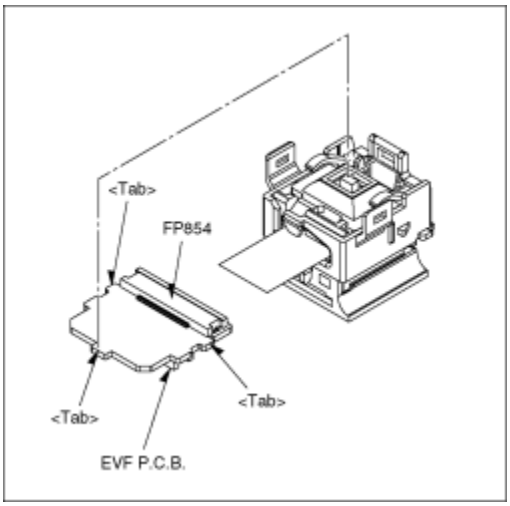


Fig. D32



8.4 Disassembly Procedures Mecha. Unit

Flow-Chart for Disassembly Procedure

No.	Item / Part	Fig.	Removal (Screw, Connector, Flex. & Other)
1	Cassette Up Unit	Fig. M1	It makes the mechanism position in Eject condition (For Battery)
		Fig. M2	3-Screws (A)
		Fig. M3	3-Tabs I remove the piece arrangement unit from rail department
2	Cylinder Unit	Fig. M4	1-Screw (B)
		Fig. M5	3-Screw (C) Cylinder Unit

Fig. M1

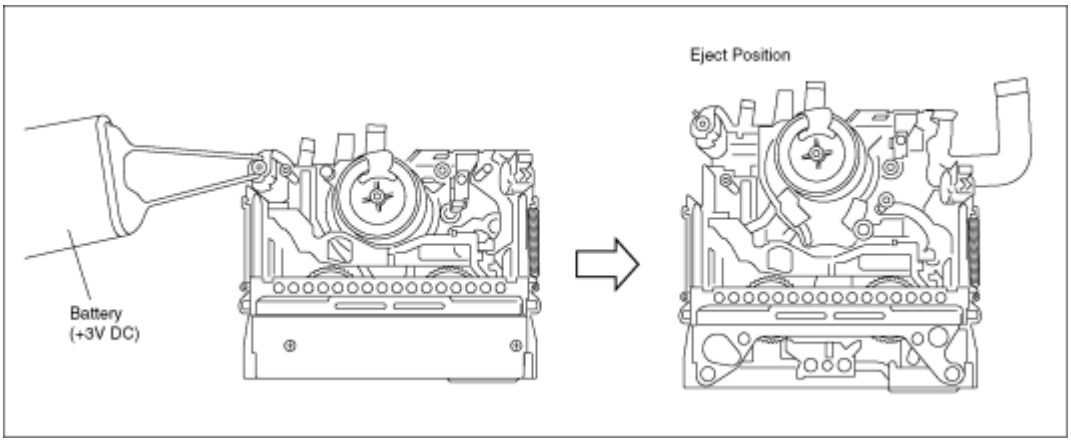


Fig. M2

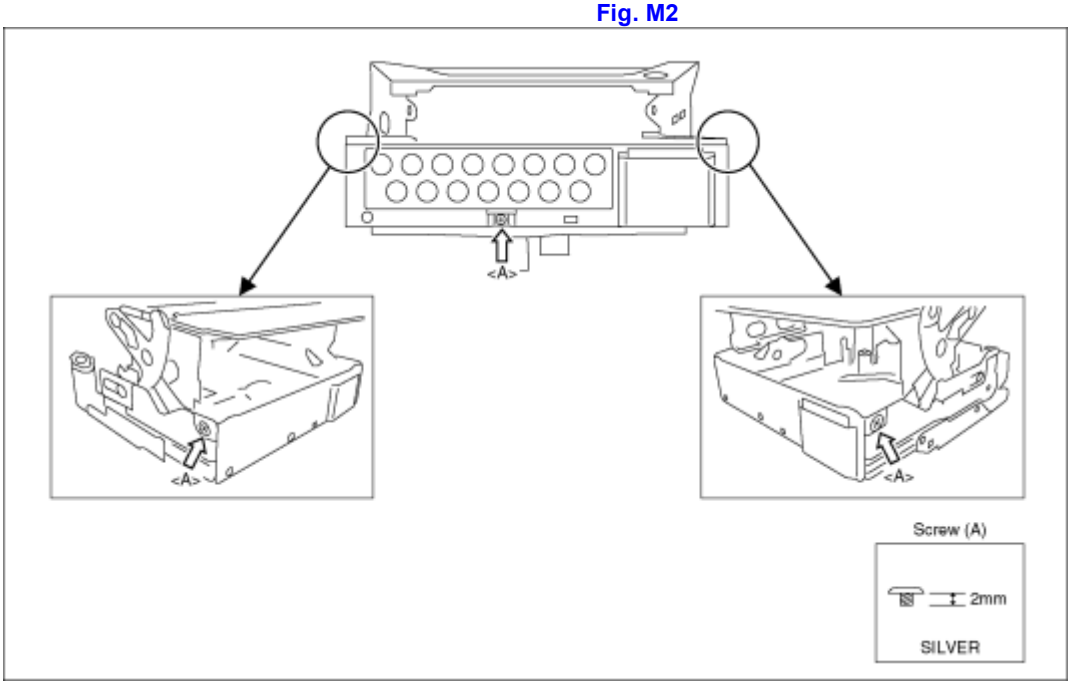


Fig. M3

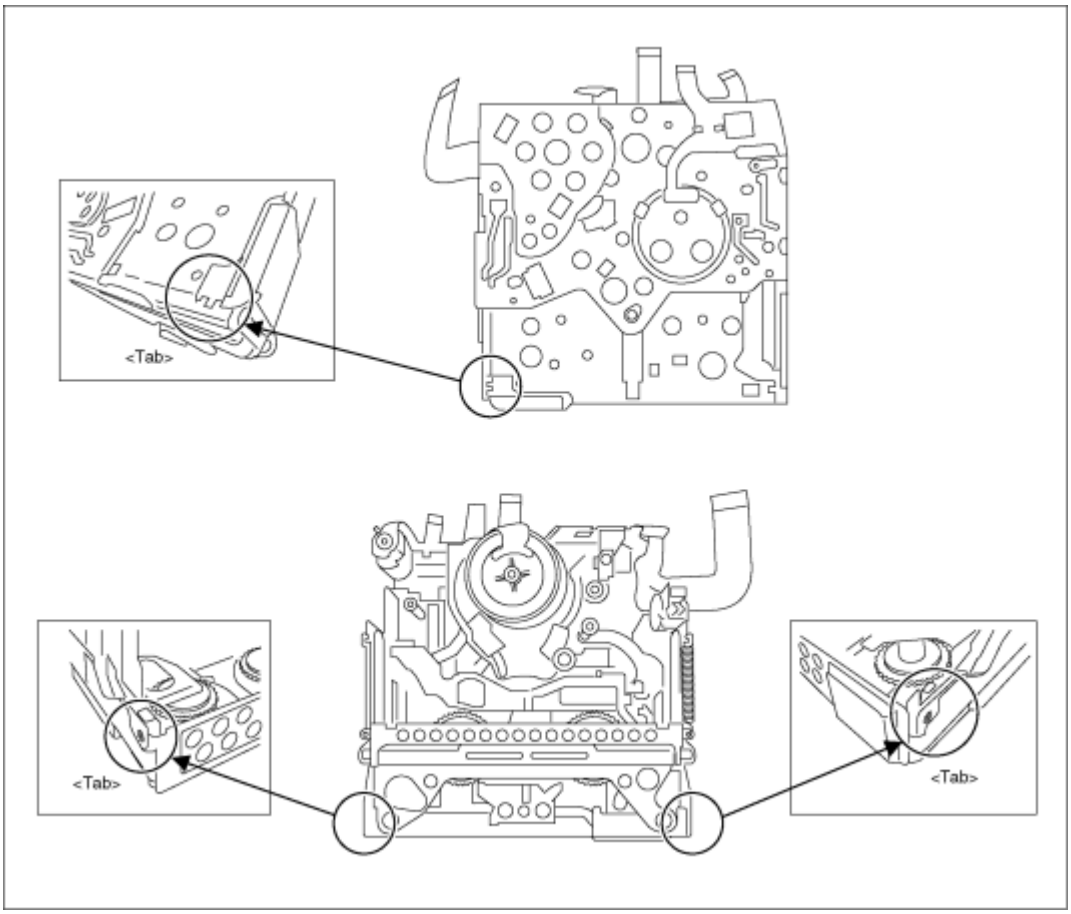


Fig. M4

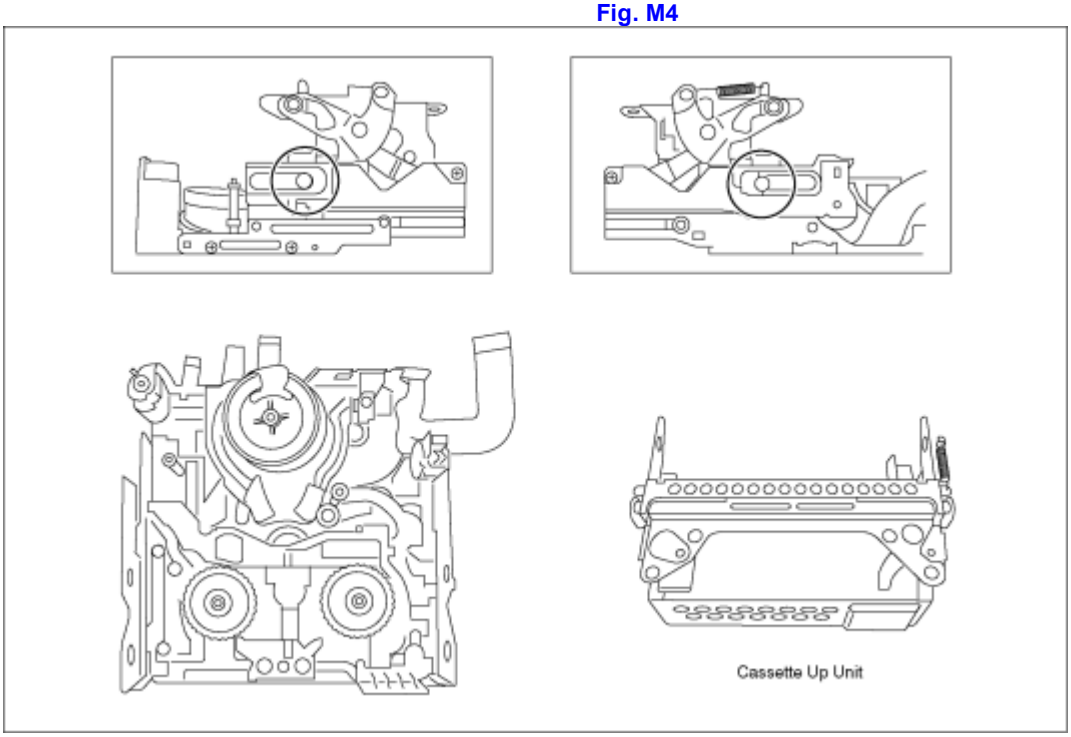


Fig. M5

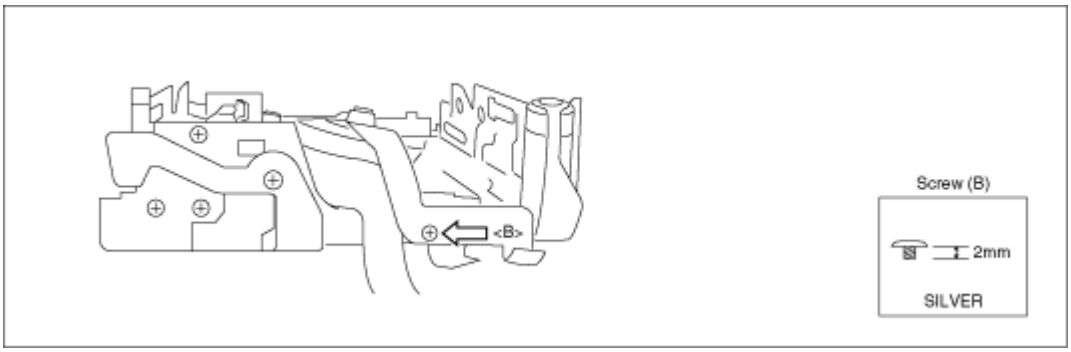
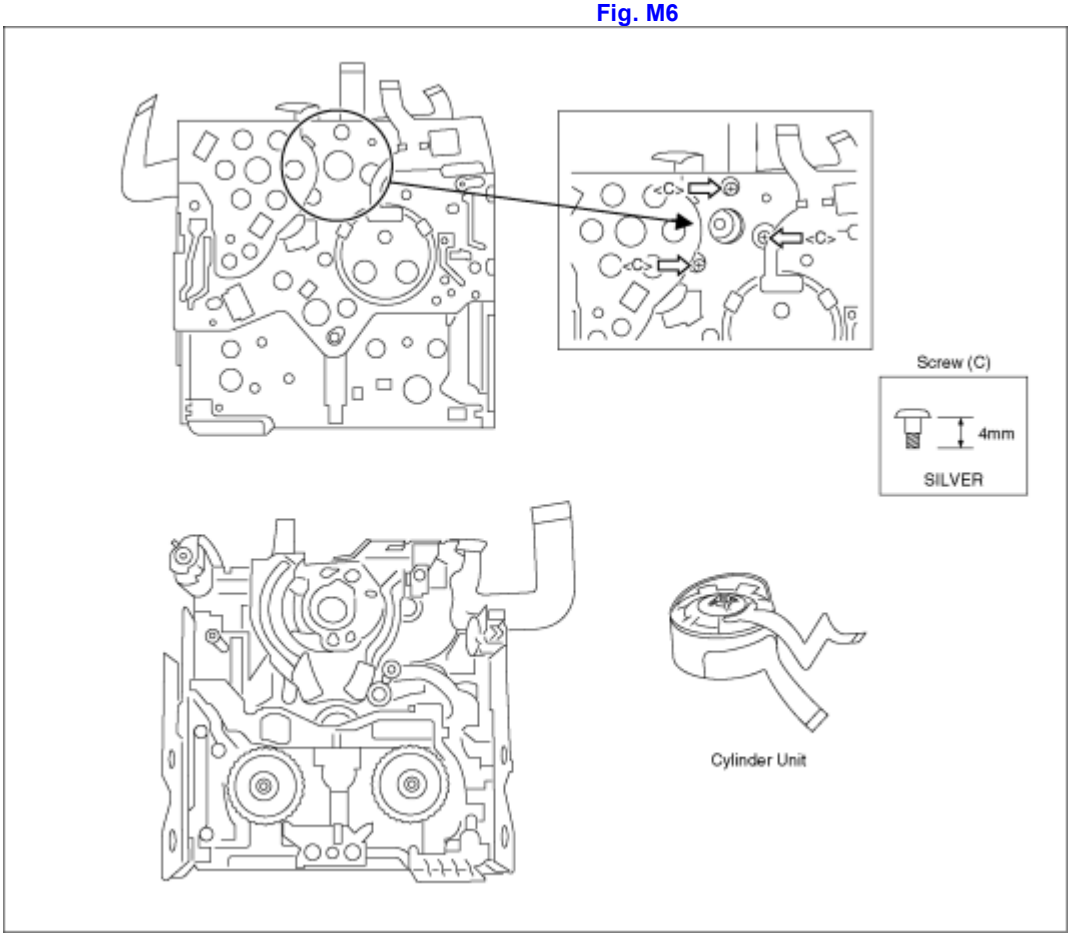


Fig. M6



8.5 Disassembly Procedures of Camera Lens Unit

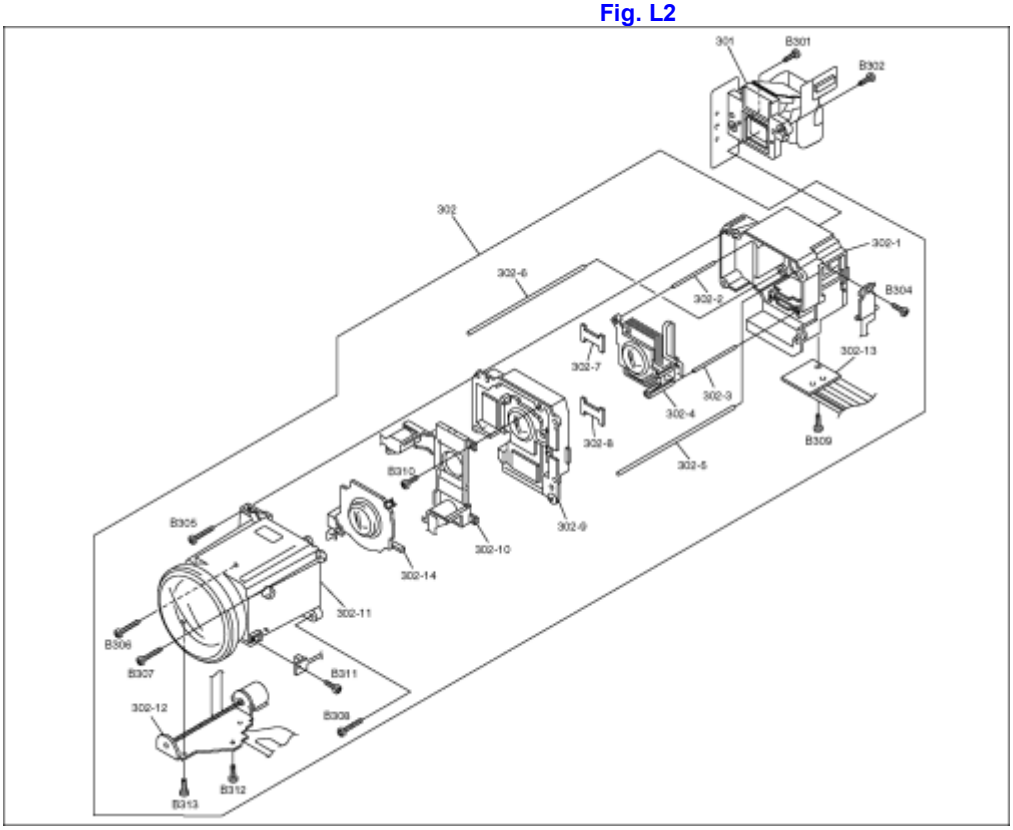
The following flowchart describes order or steps for removing the Camera lens unit and certain printed circuit boards in order to make access to the item needing service.
To reassemble the unit follow the steps in reverse order.

Fig. L1

1. Prism Unit	Ref.-No.301
2. Lens Flix. P.C.B.	Ref.-No.302-13
3. Zoom Motor Unit	Ref.-No.302-12
4. Lens Unit	Ref.-No.302-11
5. Zoom Guide Pole & 2nd Moving Frame Unit	Ref.-No.302-5/302-6/302-14
6. IRIS Unit	Ref.-No.302-10
7. OIS Unit	Ref.-No.302-9
8. Side Yoke	Ref.-No.302-7/302-8
9. 4th Moving Frame Unit	Ref.-No.302-4
10. Master Flange Unit & Focus Guide Pole	Ref.-No.302-1/302-2/302-3

Note 1:
Each Ref.numbers are equivalent to number of Fig.L2 and Parts List.

Fig. L2



9 Measurements and Adjustments

9.1 Service Positions

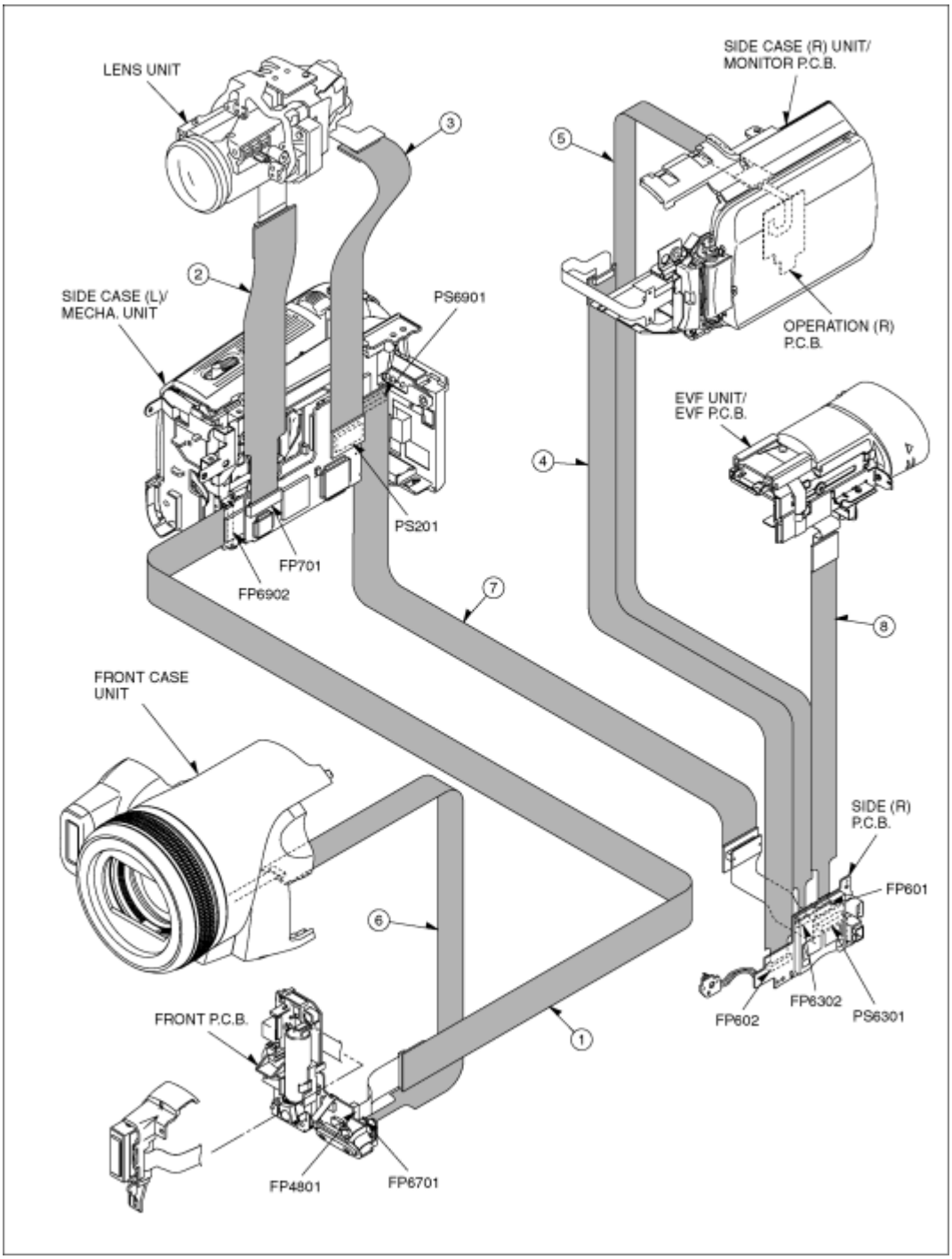
9.1.1 List of the extension cables

Use the following extension cables when checking or adjusting individual circuit boards except module Parts. (Main P.C.B. and Sub P.C.B.)

Ref.	Part No.	Pin	Part Name	Connection			Q'ty	Remarks
(1)	VFK1575C4520	45	Flat Cable	FP6902 (Main)	-	FP4801 (Front)	1	as NV-GS400
(2)	VFK1575C4520	45	Flat Cable	FP701 (Sub)	-	Lens Unit	1	as NV-GS400
(3)	VFK1453	40	Flat Cable	PS201 (Sub)	-	Prism Unit	1	as NV-GS200
(4)	VFK1716	25	Flat Cable	FP602 (Side R)	-	FP902 (Monitor)	1	as NV-GX5
(5)	VFK1465	5	Flat Cable	FP6302 (Side R)	-	Operation (R) Unit	1	as NV-GS50
(6)	VFK1440	10	Flat Cable	FP6701 (Front)	-	MF Sensor Unit	1	as NV-DS7
(7)	VFK1993	60	Flat Cable	PS6901 (Main)	-	PS6301 (Side R)	1	as NV-GS300
(8)	VFK1978	31	Flat Cable	FP601 (Side R)	-	FP853 (EVF)	1	as SDR-S100

9.1.2 Checking and repairing individual circuit boards except module parts (Main P.C.B. and Sub P.C.B.)

How to use extension cables.



9.2 Location for Connectors of the Main P.C.B. & Sub P.C.B.

9.2.1 Main P.C.B.

9.2.2 Sub P.C.B.

9.3 Electrical Adjustment Procedures

9.3.1 Computer assisted adjustment system adjustment

This unit employs the computer assisted system named; for electrical adjustment. TATSUJIN PC-Adjustment
It is required to install a USB driver for service which can be download only from TSN-WEB.

9.3.2 Set-up manual for DV-Camcorder.

Pay attention, because the adjustment method is different from this machine.

1. Save the software
   Install the effective model's TATSUJIN Software to PC: Personal Computer.
2. Set-Up
   1. It need the connection between the PC and this unit with USB cable.
   2. Connect the PC and DV Camcoder as shown in Fig. E1 and E2.
   3. The adjustment instruction is available at on the Software download web-site in Support Information from NWBG-PAVC , together with maintenance software.
      TSN System

Fig. E1

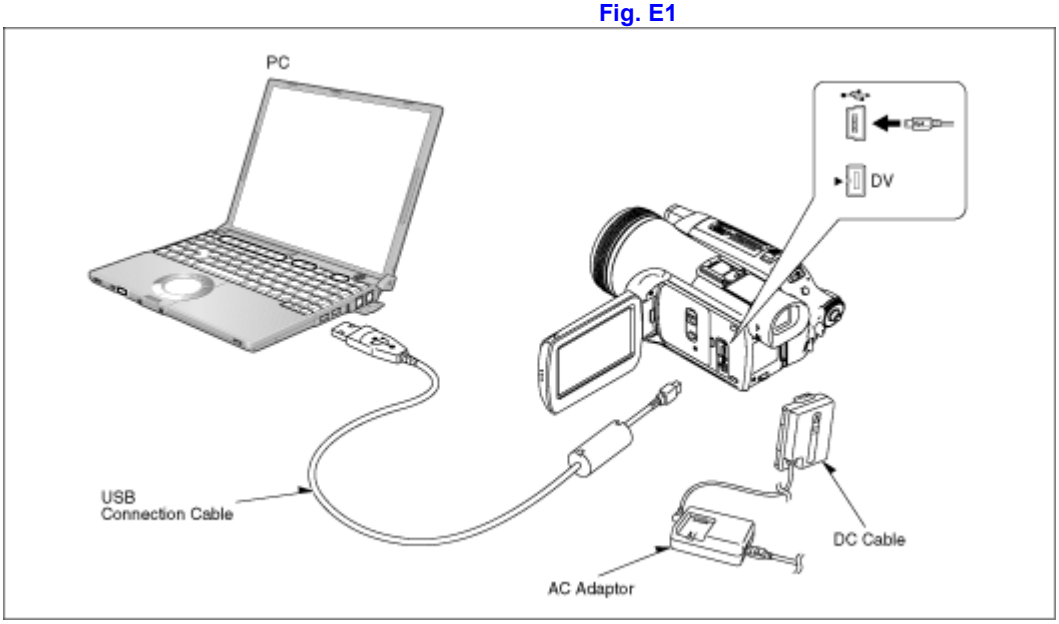
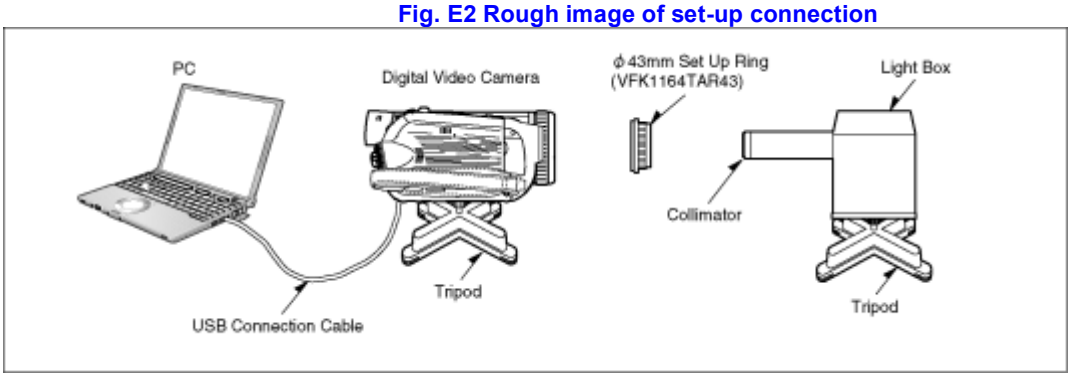


Fig. E2 Rough image of set-up connection

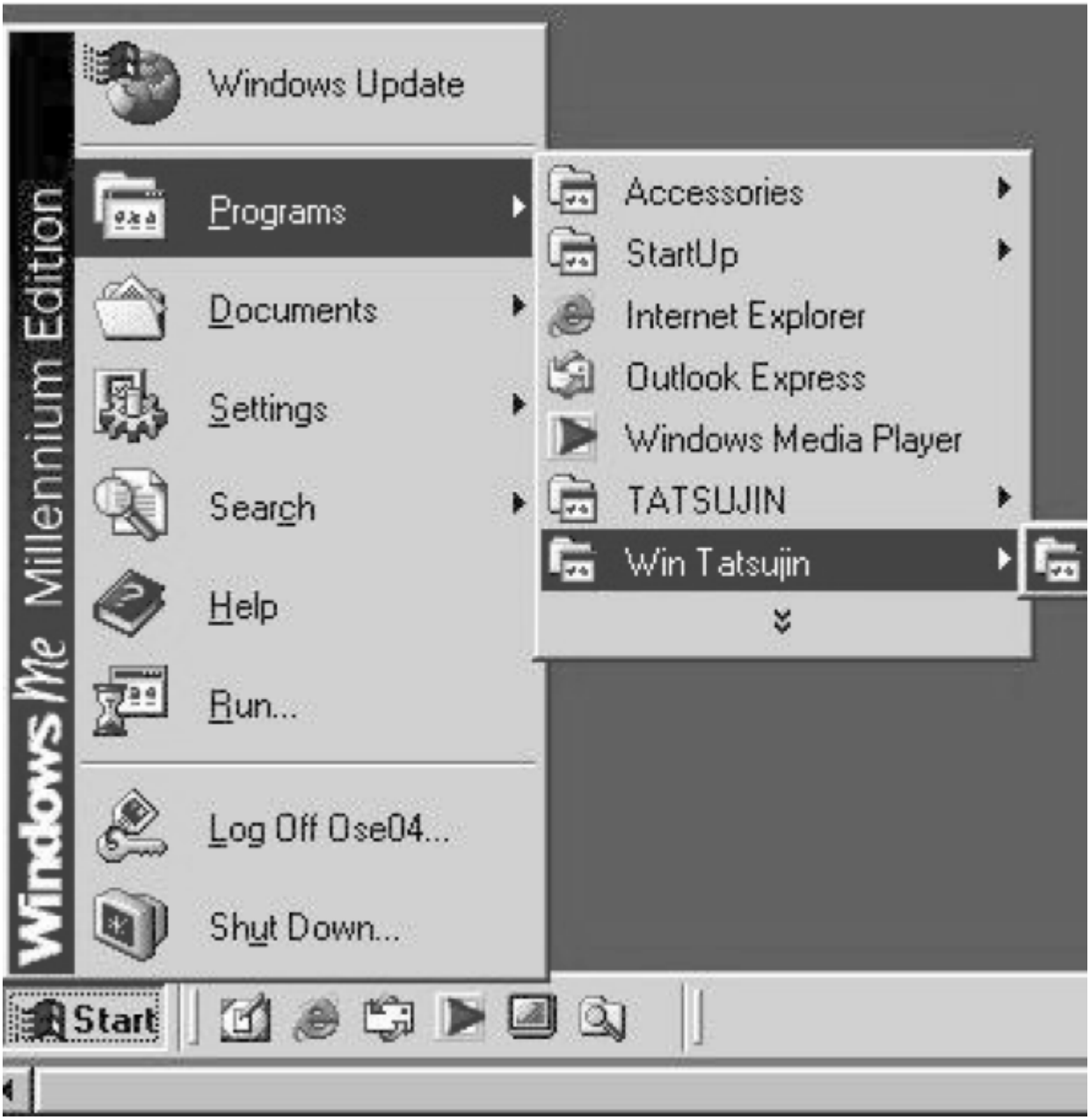


Ref	Name	Parts No.	Q'ty	Remarks
1	DV Camcorder	---	1	The Camcorder being adjusted.
2	Personal Computer	---	1	With Tatsujin Software.
3	AC Adaptor	---	1	The AC Adaptor for DV Camcorder.
4	DC Cable	---	1	The AC Adaptor for DV Camcorder.
5	USB Cable	---	1	Connect the Comcoder and PC.
6	Step Up Ring	VFK1164TAR43	1	For Collimator 43mm
7	TATSUJIN PC-Adjustment Program	VF0D2003AV30	1	

9.3.3 Set up PC-EVR adjustment program

1. Turn on the PC and install the TATSUJIN Adjustment Program into the PC.
2. TATSUJIN PC-Adjustment Program start in the following procedure.
   PC Menu : [Start] → [Program] → [win Tatsujin] → [DV Movie] → [NV-GS500 Series]

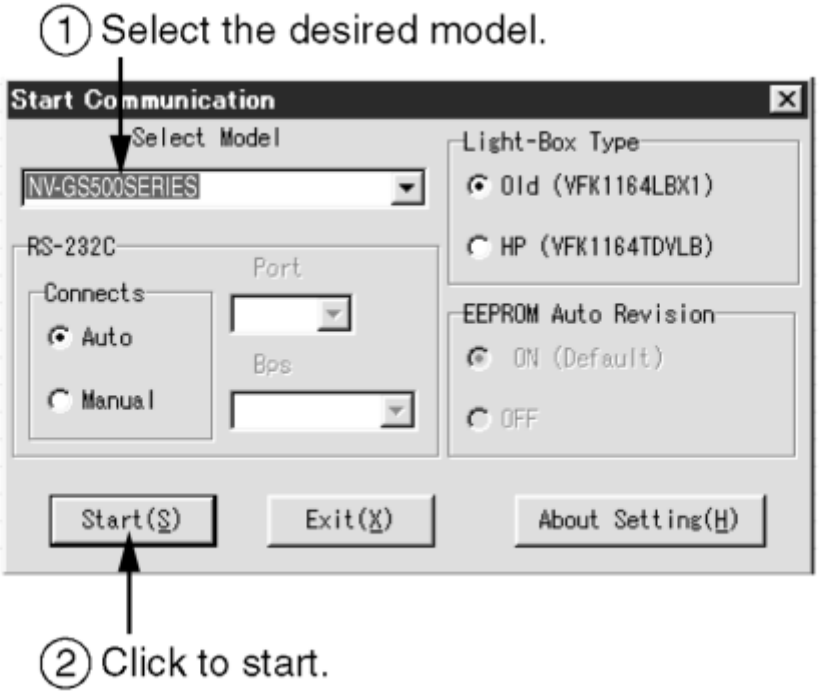
Fig. E3-1



The main menu display will be displayed.

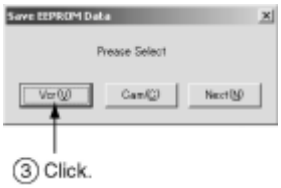
3. Select the desired model.
4. Turn on the camcorder. Then, click . Start

Fig. E3-2



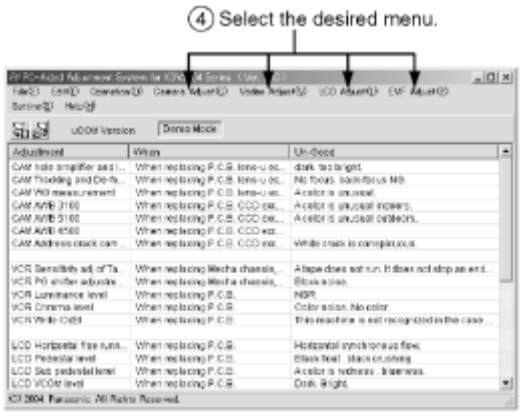
5. The communication is complete, and the dialog will appear.
   Then, click to save the eeprom data, VCR (V) or Cam (C)

Fig. E3-3



6. Saving for EEPROM data is complete, menu will appear.
   To perform each adjustment, display the adjustment menu by selecting the desired menu from , Camera Adjust , Video Adjust or and select each adjustment item. LCD Adjust

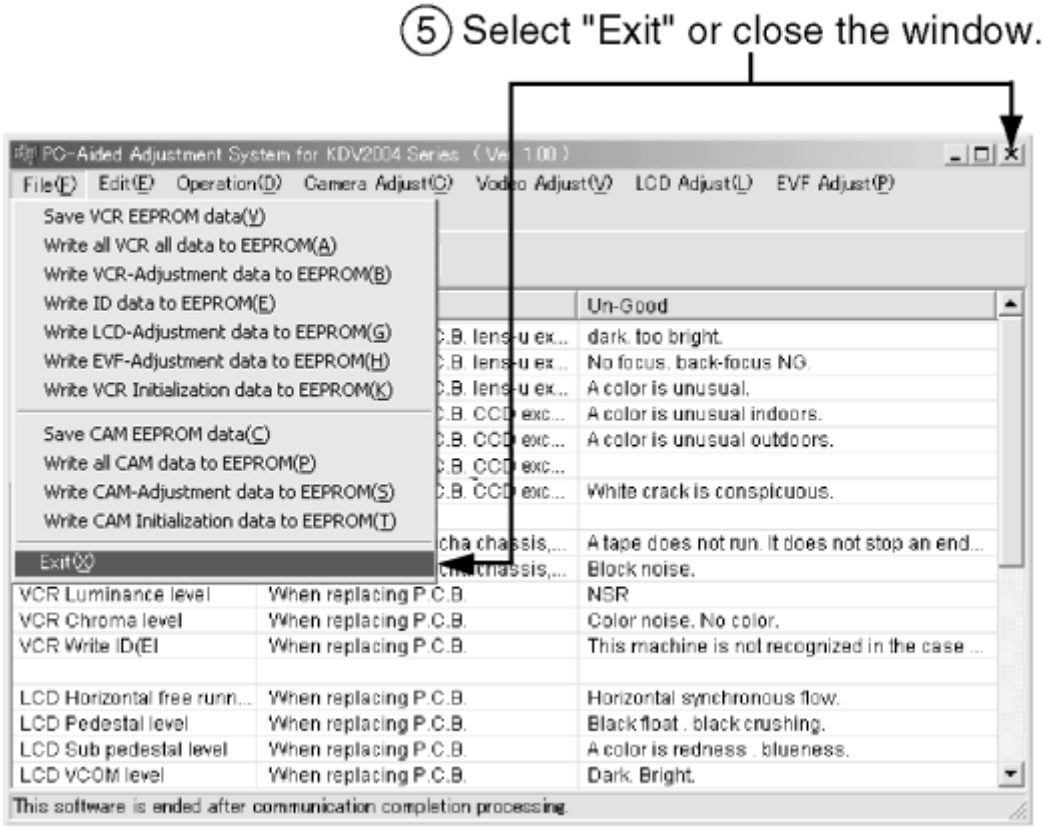
Fig. E3-4



Note:
The adjustment data is stored to the EEPROM IC after each adjustment.

7. After adjustment, to end the software, select in file menu or close the window. Exit

Fig. E3-5


⑤ Select "Exit" or close the window.
PC-Aided Adjustment System for KDV2004 Series
File(F) Edit(E) Operation(D) Camera Adjust(C) Video Adjust(V) LCD Adjust(L) EVF Adjust(P)
Save VCR EEPROM data(V)
Write all VCR all data to EEPROM(A)
Write VCR-Adjustment data to EEPROM(B)
Write ID data to EEPROM(E)
Write LCD-Adjustment data to EEPROM(G)
Write EVF-Adjustment data to EEPROM(H)
Write VCR Initialization data to EEPROM(K)
Save CAM EEPROM data(C)
Write all CAM data to EEPROM(P)
Write CAM-Adjustment data to EEPROM(S)
Write CAM Initialization data to EEPROM(T)
Exit(X)
Un-Good
dark. too bright.
No focus. back-focus NG.
A color is unusual.
A color is unusual indoors.
A color is unusual outdoors.
White crack is conspicuous.
A tape does not run. It does not stop an end...
Block noise.
VCR Luminance level When replacing P.C.B. NSR
VCR Chroma level When replacing P.C.B. Color noise. No color.
VCR Write ID(EI When replacing P.C.B. This machine is not recognized in the case ...
LCD Horizontal free runn... When replacing P.C.B. Horizontal synchronous flow.
LCD Pedestal level When replacing P.C.B. Black float . black crushing.
LCD Sub pedestal level When replacing P.C.B. A color is redness . blueness.
LCD VCOM level When replacing P.C.B. Dark. Bright.
This software is ended after communication completion processing.

9.3.4 Initial guideline

The table below shows which adjustments are necessary according to the unit parts and individual parts to be replaced. Make sure to perform these adjustments shown below as necessary.

Adjustment Item \ Replacement Parts		Sub P.C.B.	Main P.C.B.	IC307 (EEPROM)	IC2002 (EEPROM)	Lens Unit	Prism Unit	Iris Unit	4th Lens Frame Unit	Cylinder Unit	Main Chassis Unit
Camera	CAM hole amplifier / Iris PWM	○		○		○	○	○			
	CAM Tracking and De-focus	○		○	○	○	○	○	○		
	CAM Revision CCD scratch	○		○			○				
	CAM AWB adjustment	○		○			○				
Video	VCR Sensitivity ADJ. of Tape sensors		○		○						○
	VCR PG shifter adjustment		○		○					○	○
	VCR Luminance level		○		○						

Note : ○ : Adjustment Item

9.4 Mechanical Adjustment Procedures

9.4.1 Adjustment item

Item	Adjustment at the time of the part exchange		
	Half finished goods mechanism	Clyinder	Remarks
Linearlty adjustment& BER value confirmation	○	○	

9.4.2 Adjustment procedures

Pay attention, because the adjustment method is different from this machine.

•Linearlty adjustment & BER value confirmation

1. Remove the mechanism adjustment cover of this machine as shown in Fig. D1.
2. Remove the front case unit. (Refer to Disassembly Procedures.)
3. The enbelope detection spcial tool board (VFK1641) is connected to this machine as shown in Fig. D2 and D3.

   Note:
   Be careful not to damage when the Passive Probe is connectied to the connection terminal of Main P.C.B..
   It exists the possibility of the damage.
4. The enbelope detection spcial tool board is connected to oscilloscope as shown in Fig. D2 and D3.
   Connect the AV Jack of this machine and the oscilloscope by using the Multi cable.
5. The post is adjusted with the post driver(VFK1899) so that recycles the normal tape which recorded NTSC signal and the detection wave-link become a flat as shown in Fig. D4.
   *At the time of the clyinder unit exchange unnecessary.
6. The post is adjusted with the post driver so that recycles a alignment tape(VFM3110EDS) and the detection wave-link become a flat once again.
7. Recycling the tape that video-taped it wirh this machine after adjustment, the BER value is confirmed withthe item of the BER the item of the BER confirmation of expert soft inside.

Fig. D1

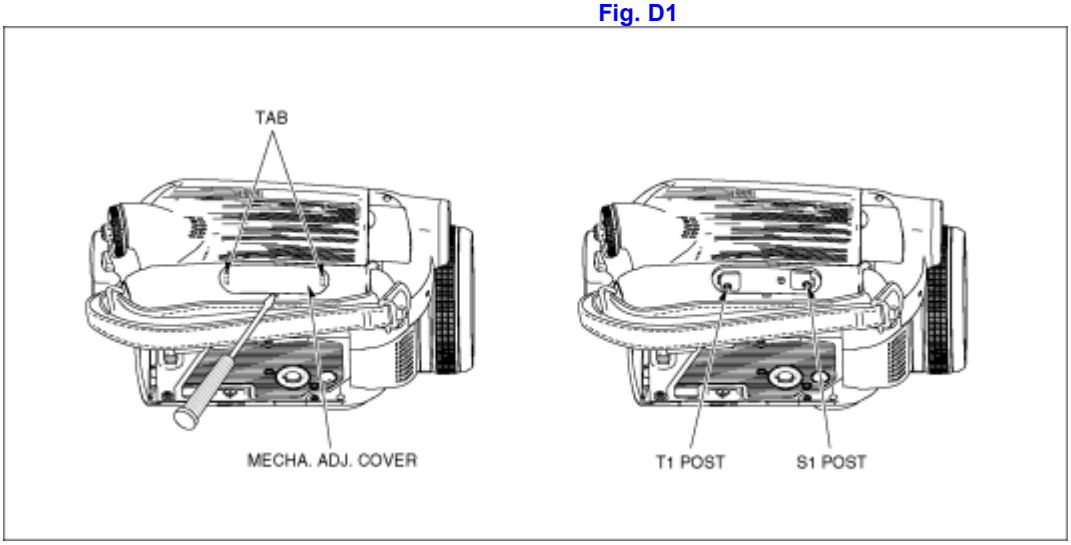


Fig. D2

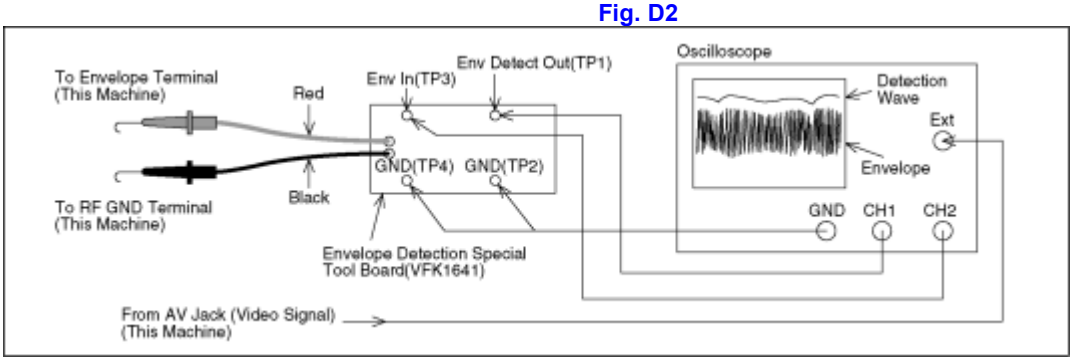


Fig. D3

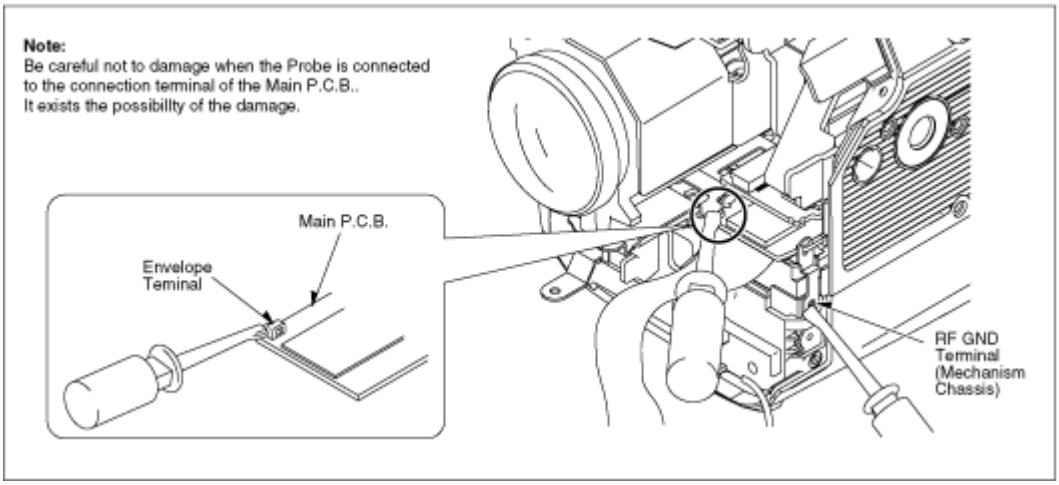
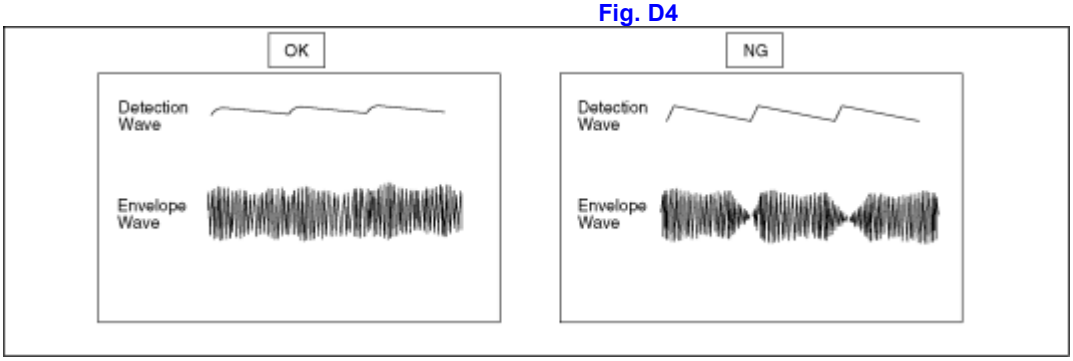

Note:
Be careful not to damage when the Probe is connected to the connection terminal of the Main P.C.B..
It exists the possibillty of the damage.
Main P.C.B.
Envelope Teminal
RF GND Terminal (Mechanism Chassis)

Fig. D4


OK
Detection Wave
Envelope Wave
NG
Detection Wave
Envelope Wave

10 Maintenace

10.1 Cleaning Lens, Viewfinder and LCD Panel

Do not touch the surface of lens, Viewfinder and LCD Panel with your hand.
When cleaning the lens, use air-Blower to blow off the dust.
When cleaning the LCD Panel, dampen the lens cleaning paper with lens cleaner, and the gently wipe the their surface.

Note:
A lens cleaning paper and lens cleaner are available at local camera shops and market place.

Note: 1.* Be sure to make your orders of replacement parts according to this list.

2. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety.
   When replacing any of these components, use only the same type.
3. Unless otherwise specified,
   All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

E.S.D. standards for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section.

NV-GS500,GS508 Interconnection Schematic Diagram

FRONT P.C.B.

FP7002

1	KCENON(A)
2	KCENON(A)
3	KCENON(A)
4	KCENON(A)
5	KCENON(A)
6	KCENON(A)
7	NC
8	NC
9	NC
10	NC
11	NC
12	TRIG
13	TRIG
14	NC
15	NC
16	GNDG
17	GNDG
18	NC
19	NC
20	NC
21	NC
22	KCENON(K)
23	KCENON(K)
24	KCENON(K)
25	KCENON(K)
26	KCENON(K)
27	KCENON(K)

FP4801

ST_NOREG	1
ST_NOREG	2
ST_NOREG	3
AV_GND	4
AV_GND	5
TRIGEND	6
CHARGE	7
CHAEND	8
ROUT	9
LOUT	10
ATFI	11
REGD3V	12
YOUT	13
PLUGIN_L	14
COUT	15
REGA5V	16
VOUT/HID	17
MICGND	18
MICGND	19
MIC(L)	20
RPLUG_L	21
MIC(R)	22
EXTMIC	23
EXTMIC_L	24
CR_POWER	25
EXTMIC(R)	26
WD_REMO	27
MIC5V	28
MIC5V	29
D_GND	30
D_GND	31
D_GND	32
D_GND	33
D_GND	34
X_SENS	35
XREF	36
Y_SENS	37
SHTER_M	39
SHTR_OP/MFL2	40
SHTR_CL/MFL1	41
SHTR_P/MFLED	42
TALLY	43
IROUT	44
REMOCON	45

FP6701

1	OP_LED/MFLED
2	CL_LED/MFVCC
3	M_GND
4	STR_CL/MFL2
5	STR_OP/MFVCC
6	NC
7	MOTR_M/MFL1
8	MOTR_M/MFL1
9	MOTR_P/SEGND
10	MOTR_P/SEGND

FLASH

MIC/ REMOTE

JK4901

REMOTE CONTROL RECEIVER

AUDIO-VIDEO/ S-VIDEO OUTPUT

JK4001

MF SENSOR FPC

CL4801
CL4802
CL4803

ECM(R)

ECM(L)

MIC UNIT

LENS UNIT

SUB P.C.B.

- CAMERA
- LENS DRIVE
- SUB CONNECTION

FP701

YDRV-	1
YDRV+	2
Y_VH-	3
Y_HO+	4
Y_VH+	5
Y_HO-	6
XDRV+	7
XDRV-	8
X_VH+	9
X_HO+	10
X_VH-	11
X_HO-	12
FMT+	13
FMT-	14
FMRA	15
FMR3ND	16
FMRB	17
FMRVCC	18
ZAN	19
ZBP	20
ZAP	21
ZBN	22
NDDRV-	23
NDCNT-	24
NDHIN+	25
NDHO-	26
NDHIN-	27
NDHO+	28
NDCNT+	29
NDDRV+	30
NC	31
NC	32
NC	33
NC	34
ALCM+	35
ALCM-	36
HOUT+	37
HIN-	38
HOUT-	39
ALCM-	40
ALCONT-	41
ALCONT+	42
ZABS	43
ZLED	44
ZENCVCC	45

PS201

V1R	1
V2R	2
V3R	3
V4R	4
SUBR	5
H2R	6
H1R	7
RGR	8
RCSUB	9
V1B	10
V2B	11
V3B	12
V4B	13
SUBB	14
H2B	15
H1B	16
RGB	17
AGND	18
AGND	19
SIGB	20
5V_B	21
15V	22
PT	23
PT	24
5V_RG	25
SIGG	26
AGND	27
AGND	28
RGG	29
H1G	30
SUBG	31
H2G	32
V3G	33
V1G	34
V2G	35
V4G	36
AGND	37
AGND	38
AGND	39
SIGR	40

PP901

100	D_GND
99	D_GND
98	D_GND
97	D_GND
96	D_GND
95	D_GND
94	D_GND
93	D_GND
92	REG3R2V
91	REG3R2V
90	REG3R2V
89	REG3R2V
88	REGA5V
87	REGA5V
86	REGD2R5V
85	REGD2R5V
84	CAM15V
83	NOREG
82	NOREG
81	NOREG
80	CAM-7R5V
79	REGD3V
78	REGD3V
77	CAM1R5V
76	CAM1R5V
75	CAM1R5V
74	CAM1R5V
73	LENS3V
72	LENS3V
71	SUB1R6V
70	TVMD
69	CLKRST
68	CAMDSOFF
67	SHDE_ONH
66	NCI/SHDE_DET)
65	NCI/SHDE_DAT)
64	NCI/SHDE_CLK)
63	CAMLVD
62	EVFRSBI
61	EVFRSCK
60	FLMDO
59	ZOOMAD
58	MFLED
57	MFL2
56	MFL1
55	IROUT
54	CHAEND
53	CHARGE
52	TRIGEND
51	GYROY
50	GYROX
49	X_Y_SENS_SW
48	CAM_SCLK
47	C_V_DATA
46	V_C_DATA
45	SS_DET
44	CAM_RTN
43	V_C_DSET
42	MEMOEND
41	WINKEND
40	M_REQUEST
39	CAM_SED_END
38	INST_ST
37	RTN_FLD
36	T_QUICK_ST
35	VTR_T
34	CAM_RST
33	CGRST
32	CCD_STBY
31	MEGAPIX
30	MEGADSTB
29	MEGABUSY
28	MEGAYC0
27	MEGAYC1
26	MEGAYC2
25	MEGAYC3
24	MEGAYC4
23	MEGAYC5
22	MEGAYC6
21	MEGAYC7
20	YC0
19	YC1
18	YC2
17	YC3
16	YC4
15	YC5
14	YC6
13	YC7
12	CLK45
11	CLK27CAM
10	CLK27A
9	D_GND
8	D_GND
7	D_GND
6	D_GND
5	D_GND
4	D_GND
3	D_GND
2	D_GND
1	D_GND

FP8602

REMOCON	45
REMOCON	44
IR_OUT	43
TALLY	42
SHTR_P/MFLED	41
SHTR_CL/MFL1	40
SHTR_OP/MFL2	39
SHTR_M	38
YREF	37
Y_SENS	36
XREF	35
X_SENS	34
D_GND	33
D_GND	32
D_GND	31
D_GND	30
D_GND	29
MIC5V	28
MIC5V	27
WD_REMO	26
EXTMIC(R)	25
CR_POWER	24
EXTMIC(L)	23
EXTMIC	22
MIC(R)	21
RPLUG_L	20
MIC(L)	19
MICGND	18
MICGND	17
VOUT	16
REGA5V	15
COUT	14
PLUGIN_L	13
YOUT	12
REGD3V	11
ATFI	10
LOUT	9
ROUT	8
CHAEND	7
CHARGE	6
TRIGEND	5
AV_GND	4
AV_GND	3
ST_NOREG	2
ST_NOREG	1

PS3001

100	D_GND
99	D_GND
98	D_GND
97	D_GND
96	D_GND
95	D_GND
94	D_GND
93	D_GND
92	REG3R2V
91	REG3R2V
90	REG3R2V
89	REG3R2V
88	REGA5V
87	REGA5V
86	REGD2R5V
85	REGD2R5V
84	CAM12V
83	NOREG
82	NOREG
81	NOREG
80	CAM-7R5V
79	REGD3V
78	REGD3V
77	CAM1R5V
76	CAM1R5V
75	CAM1R5V
74	CAM1R5V
73	LENS3V
72	LENS3V
71	SUB1R6V
70	TVMD
69	CLKRST
68	CAMDSOFF
67	SHDE_ONH
66	SHDE_DET
65	SHDE_DAT
64	SHDE_CLK
63	CAMLVD
62	EVFRSBI
61	EVFRSCK
60	FLMDO
59	ZOOM_AD
58	MFLED
57	MFL2
56	MFL1
55	IROUT
54	CHAEND
53	CHARGE
52	TRIGEND
51	GYROY
50	GYROX
49	X_Y_SENS_SW
48	CAM_SCLK
47	C_V_DATA
46	V_C_DATA
45	SS_DET
44	CAM_RTN
43	V_C_DSET
42	MEMOEND
41	WINKEND
40	M_REQUEST
39	CAM_SED_END
38	INST_ST
37	RTN_FLD
36	T_QUICK_ST
35	VTR_T
34	CAM_RST
33	CGRST
32	CCD_STBY
31	MEGAPIX
30	MEGADSTB
29	MEGABUSY
28	MEGAYC0
27	MEGAYC1
26	MEGAYC2
25	MEGAYC3
24	MEGAYC4
23	MEGAYC5
22	MEGAYC6
21	MEGAYC7
20	YC0
19	YC1
18	YC2
17	YC3
16	YC4
15	YC5
14	YC6
13	YC7
12	CLK45
11	CLK27CAM
10	CLK27A
9	D_GND
8	D_GND
7	D_GND
6	D_GND
5	D_GND
4	D_GND
3	D_GND
2	D_GND
1	D_GND

FP6803

1	RTC_3V
2	NC
3	DEW
4	NC
5	POWER SW
6	VTR_KEY_5
7	POWER LED
8	QUICK START LED
9	VTR_KEY_3
10	R_OP3V
11	VTR_KEY_2
12	VTR_KEY_1
13	ZOOMAD
14	GND(SIGNAL)
15	GND(LED)
16	GUI_LED
17	S/S
18	SP_OUT1
19	SP_OUT1
20	SP_OUT2
21	SP_OUT2

FP1101

1	EJECT_SW
2	NC
3	NC
4	+B
5	+B
6	+B
7	+B
8	+B
9	+B
10	NC
11	NC
12	D
13	GND
14	GND
15	GND
16	GND
17	GND
18	GND

W T ZOOM

PHOTO SHOT

MODE DIAL/ JOYSTICK

POWER

REC START/STOP

CASSETTE COVER UNIT

FP6101

1	VTR_KEY_5
2	R_OP3V
3	NC
4	ZOOMAD
5	POWER SW
6	DEW
7	POWER LED
8	QUICK START LED
9	GND(SIGNAL)
10	GND(LED)
11	VTR_KEY_3
12	S/S
13	VTR_KEY_1
14	GUI_LED
15	NC
16	VTR_KEY_2

LITHIUM BATTERY

FP6102

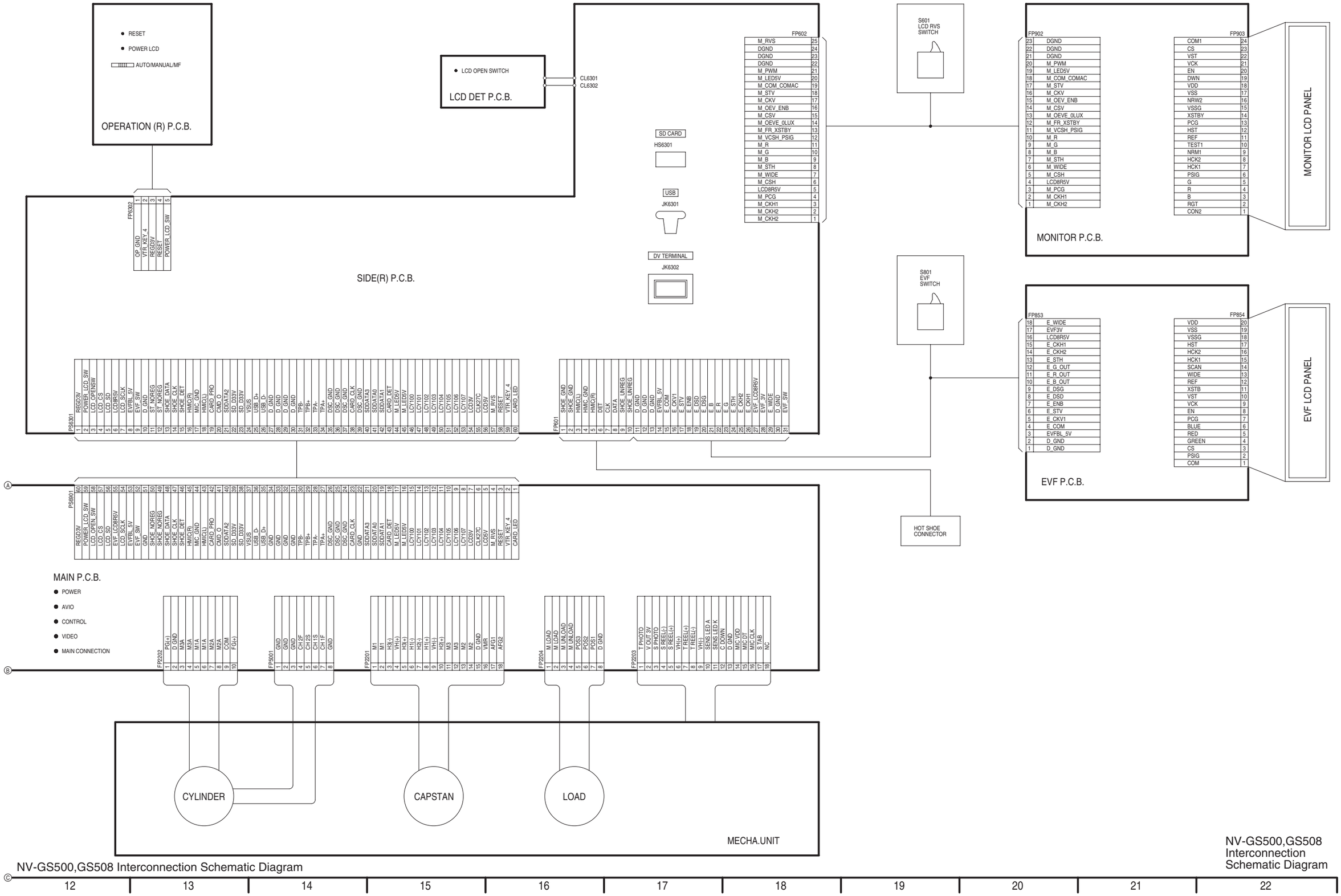
S/S	1
GUI_LED	2
GND	3
ZOOMAD	4
VTR_KEY_1	5
VTR_KEY_2	6
R_OP3V	7
VTR_KEY_3	8
QUICK START LED	9
POWER LED	10
VTR_KEY_5	11
POWER SW	12
DEW	13
RTC_3V	14

SIDE(L) P.C.B.

SPEAKER

BATTERY CATCHER

S1101 EJECT SWITCH



NV-GS500,GS508 Interconnection Schematic Diagram

NV-GS500,GS508
Interconnection
Schematic Diagram

◆About Indication of the schematic diagram

IMPORTANT SAFETY NOTICE:

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1.Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "$" mark.

2.It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.

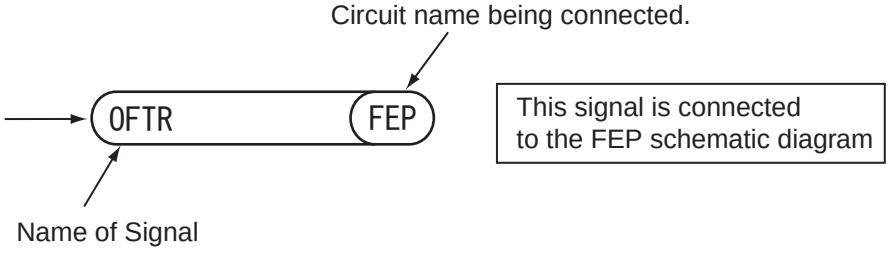
3.The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.

4.Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.

5.The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.

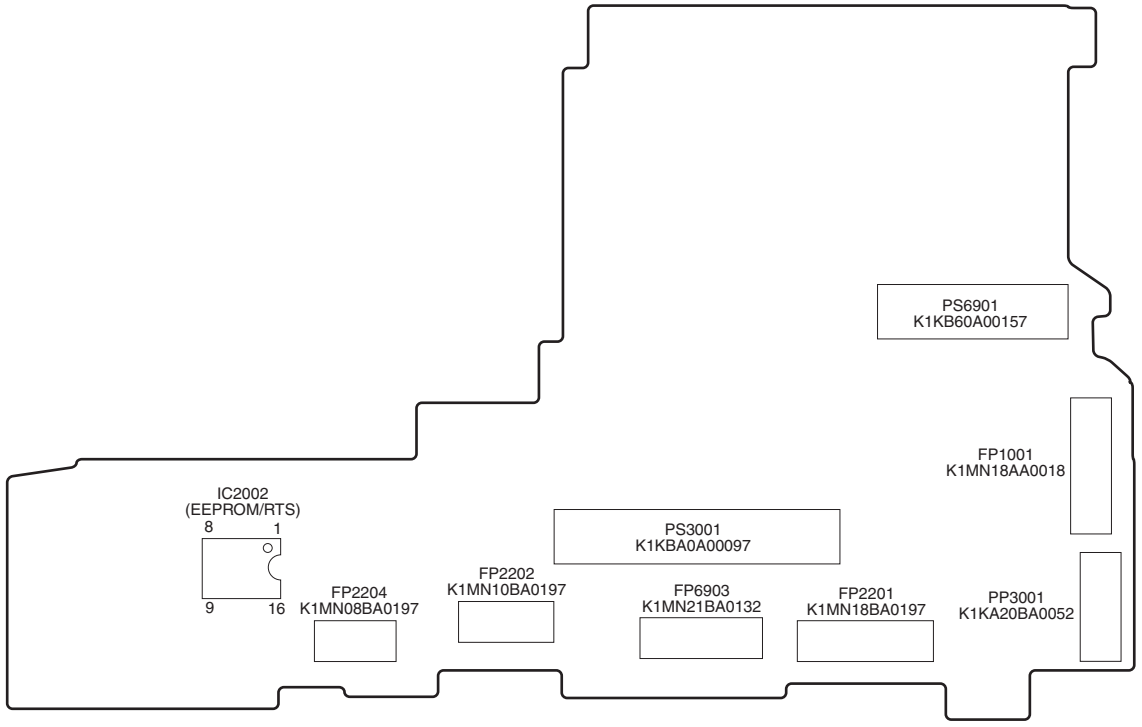
6.Use the parts number indicated on the Replacement Parts List .

7.Indication on Schematic diagrams:

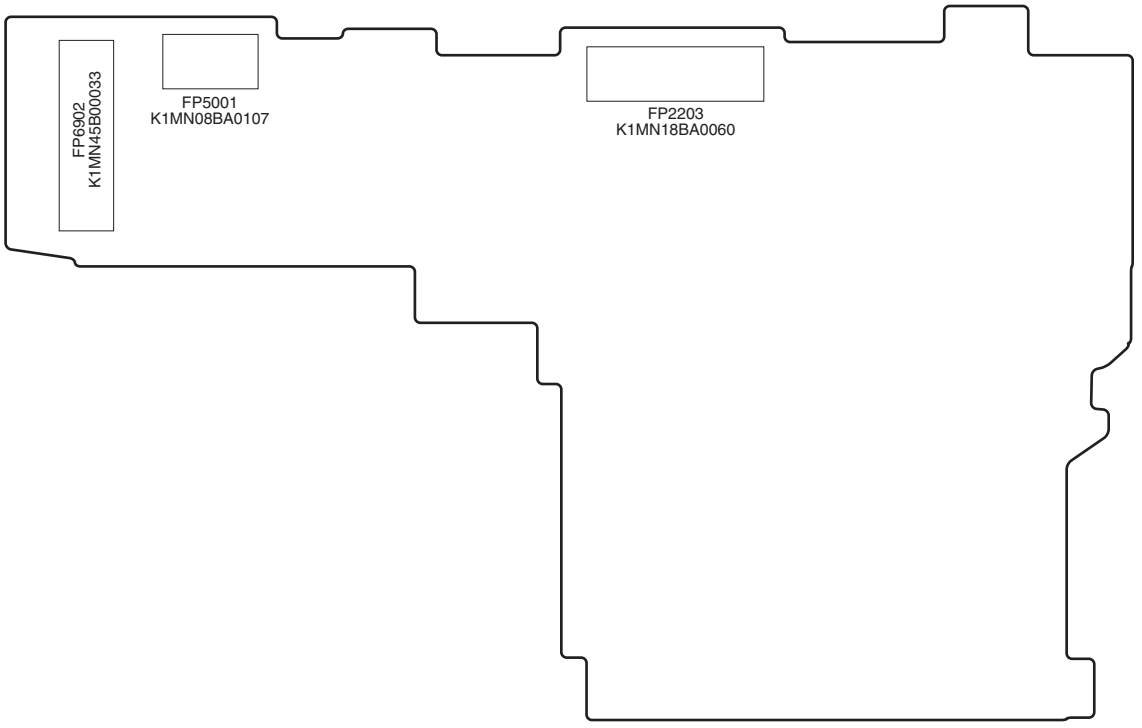


8.Try to click on the subject repeatedly when the drawing screen link does not working properly.

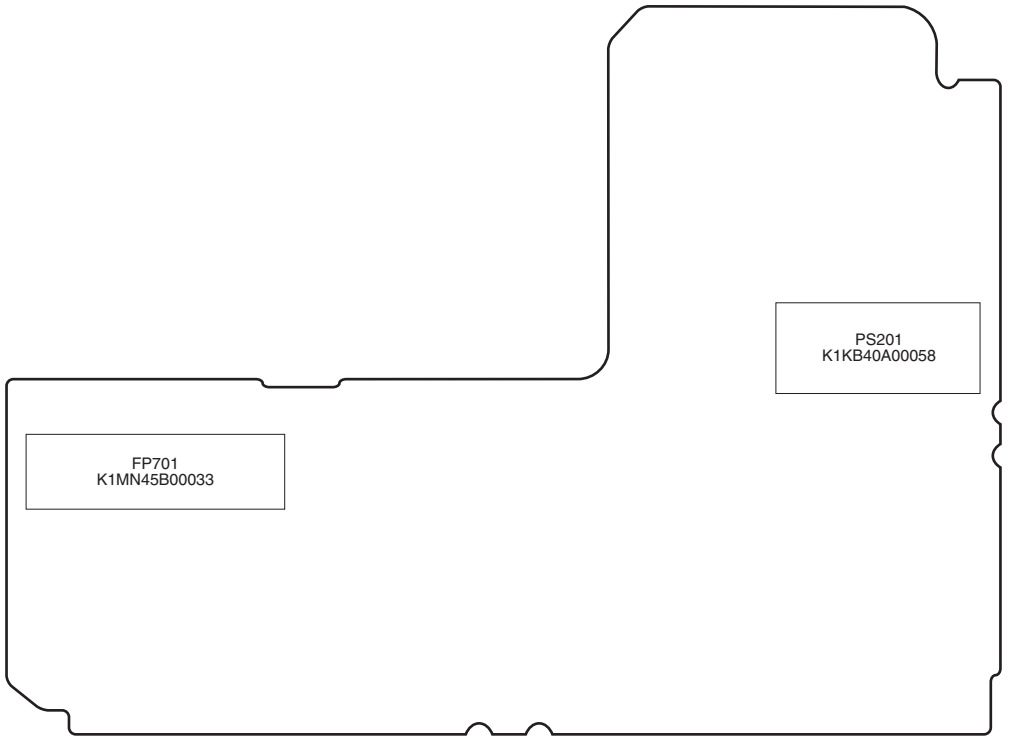
Since data volume for double sides P.C.B.is heavy, it might be taking time for display and/or access



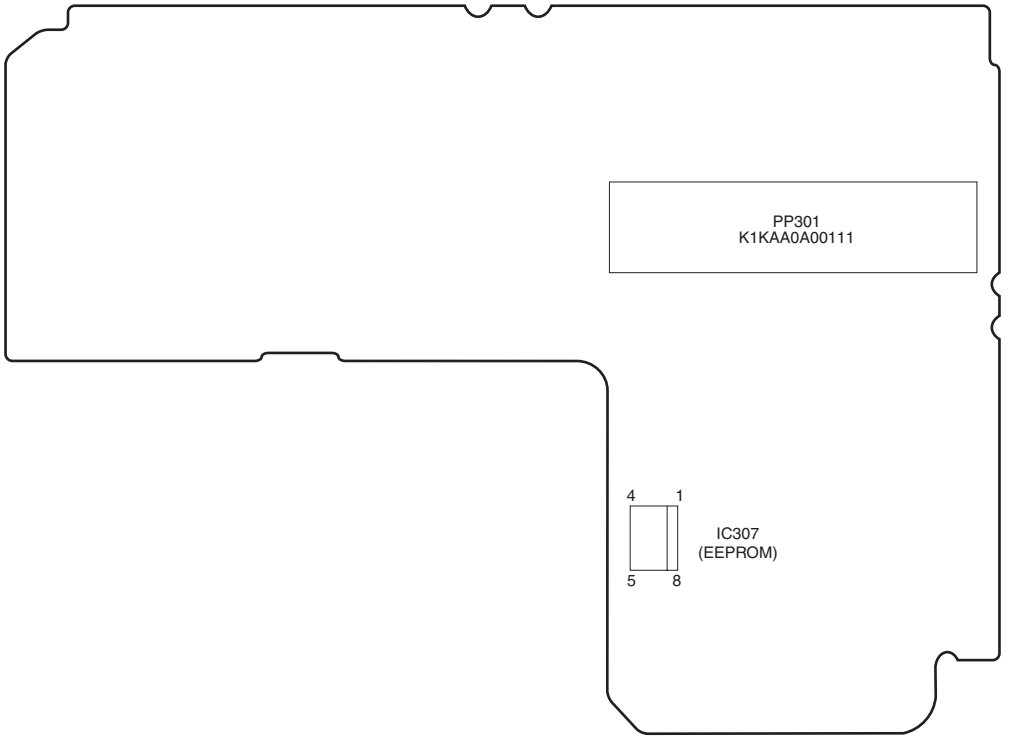
(COMPONENT SIDE)



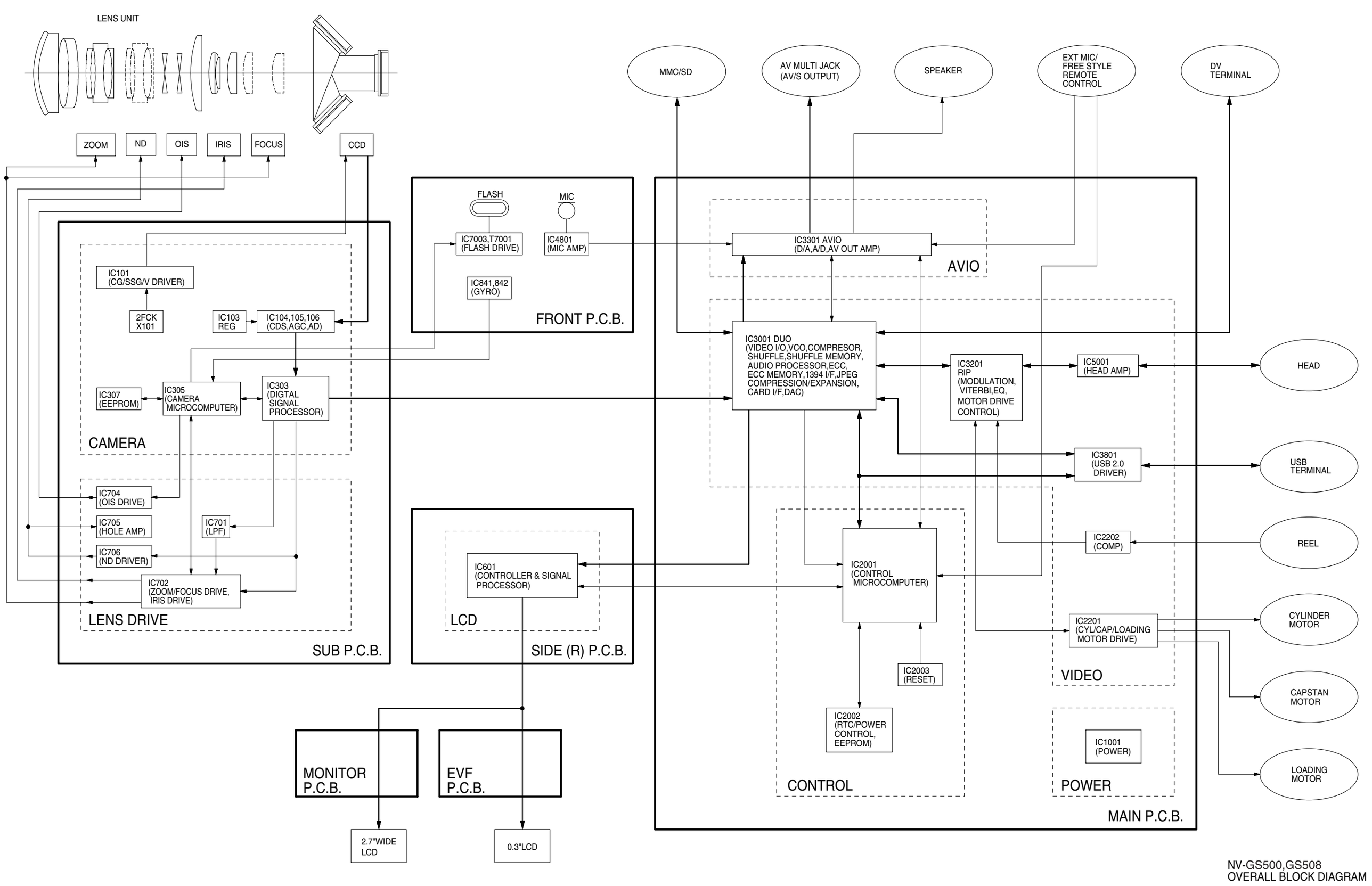
(FOIL SIDE)



(COMPONENT SIDE)



(FOIL SIDE)



NV-GS500,GS508
OVERALL BLOCK DIAGRAM